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Postfach 102148
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Fed. Rep. Germany
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PROTO-LANGUAGES

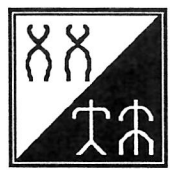
AND PROTO-CULTURES

Materials from the First International
Interdisciplinary Symposium on Language and
Prehistory, Ann Arbor, 8-12 November, 1988

edited

by

Vitaly Shevoroshkin



BPX 25

Universitätsverlag Dr. Norbert Brockmeyer • Bochum •
1990

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Proto languages and proto cultures : materials from the 1. International Interdisciplinary Symposium on Language and Prehistory, Ann Arbor, 8-12 November, 1988 / ed. by Vitaly Shevoroshkin. – Bochum : Brockmeyer, 1990
(Bochum publications in evolutionary cultural semiotics ; 25)
ISBN 3-88339-789-X

NE: Shevoroshkin, Vitaly [Hrsg.]; International Interdisciplinary Symposium on Language and Prehistory <01, 1988, Ann Arbor, Mich.>; GT

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Printed in Germany by Druck Thiebes GmbH & Co. KG, Hagen.

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BOCHUM PUBLICATIONS IN EVOLUTIONARY CULTURAL SEMIOTICS

EDITORIAL

BPX is a series of monographs or collections of papers (also resulting from pertinent colloquia) that are published at irregular intervals. The series is designed to bring into focus the interaction of nature and culture. Particular emphasis will be given to the overall ideas of **integration** and **focus**. Communicative processes will be considered to be integrated parts of cosmogenesis, biogenesis, psychogenesis etc. The fundamental processes underlying all levels of evolution are assumed to be identical. Not unlike most other sciences, **evolutionary semiotics** is considered to share in an ultimately unitary and indivisible reality. Its specificity is derived solely from its focus on a particular level of evolution: although seemingly obvious, the exact nature of this inevitable bias (human or proto-human predicament) continues to deserve concentrated attention. The prototypical structure for this is considered to be **culture**: a phenomenon whose true integrative potentialities have not yet been fully discovered or explored. For a semiotics thus conceived, structure and process are not different phases of reality and/or sciences but rather mere faces of a unitary field. In the view of this series, then, any fruitful attempt at semiotic analysis will be based on premises of macro-integration - or **evolution** - and of micro-integration - or **culture.**

While it is the ambitious goal of this series to encourage interdisciplinary work on the nature of culture as outlined above, BPX will have to be content - especially in its initial stages - with more modest attempts at elucidating semiogenesis. In addition, most contributions will presumably be relatively specific, covering all possible areas of culture or proto-culture, with the desired unity or homogeneity - regarding aim and scope - largely confined to the background.

Bochum, December 1984 W. A. K.

ACKNOWLEDGEMENTS

I would like to thank the people and institutions who made this third collection of materials from our 1988 Ann Arbor *Symposium on Language and Prehistory* possible. Its preparation was funded by discretionary grants from the following branches of the University of Michigan, Ann Arbor: the Office of the Vice President for Research; the Office of the Associate Dean for Research (College of Literature, Science, and the Arts); the Rackham School of Graduate Studies; and the Center for Russian and East European Studies. Grants were also given by the Northcote Parkinson Fund (President John Train), and Dr. Ralph Baldwin.

I am deeply indebted to our editors—Professor Walter Koch and Dr. Claudia Putz for their consistent help and encouragement, as well as to Mark Kaiser, both for his contributions and his assistance.

I am very grateful to Alex Eulenberg, Alex Sirota, and Irene Zadonsky for proof-reading, re-typing, and re-formatting the various manuscripts and typescripts. This volume could not have been compiled without them.

—V. S., Ann Arbor, January, 1990

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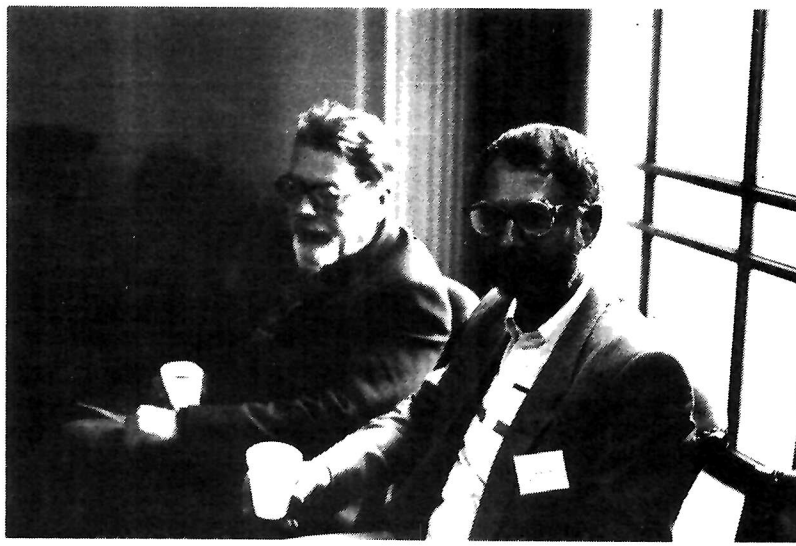

ANDREI KOROLËV and VIKTOR SHNIRELMAN - ANN ARBOR, Nov. 1988

INTRODUCTION

I am writing this at a time when work on deep reconstruction of proto-languages (or, rather, proto-proto-languages) is rapidly progressing both in Russia and Czechoslovakia. As for the U.S., a substantial amount of broad comparisons of languages is produced here, which, unfortunately, is not always precise. Linguists who work in deep reconstruction benefit from American research since they can easily separate plausible data from implausible. But lack of precision contributes to a growing skepticism among most other linguists; this influences negatively both administrative bodies (which provide research support) and potential young scholars. I see some improvement in recent long range comparisons but not much. It is a pity that almost no reconstructions of languages — parents of language families is being made in America (with the exception of Hokan reconstruction by T. Kaufman from Pittsburgh; the reconstruction of Uto-Aztecan does not progress any more).

As for the broad comparisons in the East, the most promising seem to be those made by Sergei Starostin, Sergei Nikolaev, Oleg Mudrak, Ilya Peiros and Vaclav Blažek; but I would like to mention in passing that the comparison of Almosan-Keresiouan with Gilyak and Chukchi-Kamchatkan by Mudrak and Nikolaev seems to be weak in many points. I also find some weak points in the Nostratic-SinoCausasian-Austronesian-MonKhmer comparisons by Peiros. A short comparative list of Nostratic, Sino-Caucasian and Amerind compiled by Starostin for a popular article seems very precise; Starostin used Ruhlen's comparison between Nostratic and Amerind (published in our first collection, Reconstructing Languages and Cultures, Bochum 1989; the above mentioned comparison by Mudrak and Nikolaev, as well as Starostin's Nostratic-SinoCaucasian comparison are present in our second collection: Explorations in Language Macrofamilies, ibid.). I would like to cite a few sets from Starostin's tri-language comparison; note that Amerind reconstructions, though preliminary, are strongly supported by Amerind languages, including archaic ones:

1. 'This, that': Ns [=Nostratic] *t'a; SC [=Sino-Caucasian] *tV; Am[erind] *ta, *ti;
2. 'What': Ns *mi; SC *mi; Am *mi-n;
3. 'Meat': Ns *Ho-msa (*s from *c in a cluster?); SC *jV-mcV; Am *maci;
4. 'Man': Ns *manV; SC *mVn-xV; Am *ma/eno;
5. 'Woman': Ns *kuni (*küni); SC *qwenV; Am *kuan (maybe *kuni);

6. 'Water, drink': Ns *ˁek'u (rather *ˁeq'u or *ˁaq'u); SC *ʔV-qV; Am *ʔaq'wa, *ʔok'wa (as for SC, it might be *ʔV-qwV; see below).

* * *

I would like to discuss here a bit of recent comparative work where additional data have provided a possibility to drastically change a genetic classification. In my preface to our previous volume (Explorations in Language Macrofamilies) I compared Salishan languages with Nostratic, and I got some correspondences which, apparently, will hold. But as soon as I started to compare Salishan with Sino-Caucasian, I saw that practically all stablest roots (pronouns 'I', 'thou'; numerals 'two', 'three'; terms for body parts, etc.) show clear matching between Salishan and Sino-Caucasian (mostly between Salishan and North-Caucasian). This kind of relationship is much closer than that between Salishan and Nostratic. Here are some examples:

7. 'I': Sa[lish] *s (as in Sq[uamish] ʔən-s), *ca (MC [=Moses Columbian] ʔin-cá, etc.): SC: NC [=North-Caucasian] *zo, Yn [=Yeniseian] *ʔa$_3$;

8. 'I': Sa *nə or the like : NEC *nV;

9. 'Thou': Sa *w[i] (as in MC ʔin-wí, etc.) : SC: NC *wo, Yn *ʔuw;

10. 'Thou': Sa: Sq ʔax^w : SC *ʔVγ, *γu etc.;

11. 'Two': Sa: MC t-q'áw's (t- is a prefix, according to Salishanists) : SC *t'-ʔq'wE (same in NC; Ns *tuʔV seems to fit both prefixes);

12. 'Three': Sa *ɬix^w : SC: NC *ƛ̌H[ě];

13. 'Head': Sa *cəq, *c'əq' : SC: Yn *cɨgV;

14. 'Thread': Sa *x̣^{w}um- : SC: NEC *gwV̱m-gwV; g is a voiced uvular stop;

15. 'Horn': Sa: MC qəx̣-mín : SC *qwVrHV (> NC *qwǟrHV, *qwǟHV); Ns *kErV̇ 'horn' is not as close to SC as Salish. There are several precise sets, showing Sa *x̣ < *rH and *r;

16. 'Heart': Sa *λ'ək^w (as in Se[chelt] s-λ'ək^w-inas) : SC: Nc *jě-rěk'wi > Cez *rɔk'^{w}ə etc.);

17. 'Hand': Sa: Se ɬál-at 'hold in hands' : SC: NC *Ho-λ'o̱lě. - Nikolaev compares this to Eyak-Athapascan (a SC language) *ɬaʔ 'hand'; cf., in Sa, Se láx̣-an 'hand';

18. 'Arm': Sa: Sq nax̣-, nix̣- : SC: NC *nɨ̱gHwV (for phonetics, cf.14);

19. 'Hand': Sa: MC kálx (cf. MC káɬx 'give') : SC: NEC *kwɨlʔV;

20. 'Palm': Sa *pəq : Sc: NEC *p'weHq'wV, Yn *boq;

21. 'Foot': Sa: MC -ap (cf. Coer d'Alene -ip 'bottom') : SC: NC *γĕ̱pV;

22. 'Eye': Sa *qə́l : Sc: Na Dene *l-quhɬ (after Ruhlen);

23. 'Eyebrow': Sa *cum (as in Sq cúm-n, Se ca-cum-an) : SC: NC *Hĕ-c'wĕmV;

24. 'Bone': Sa: MC ṣ-c'ą́m', Cowichan s-ɕam^{ʔ} : SC: NEC *Hc'wə̱̄jmĕ/ŏ 'leg-bone' (> proto-Lezgin *c'^{w}ä̈m- 'shin-bone' > Lezgin c'um, Tsakh c'om);

25. 'Arm': Sa: Kalispel -čuw- etc. : SC: NEC *^{ʔ}a-čwV̱, ST *[č]ow 'take';

26. 'Pus': MC ná^{ʔ}q' 'rotten food' : SC: NEC *nĕwq'u, ST nōk etc.

This list can be continued very easily; a close relationship between Salishan and Sino-Caucasian languages seems quite obvious. This means that Salishan — apparently along with Wakashan, Algic and other Almosan-Keresiouan languages — belongs to the Sino-Caucasian languages (=Dene-Caucasian) phylum. Nikolaev has demonstrated that the Na Dene (Athapascan) languages belong to this phylum as well (but they seem to be less archaic than Salishan — and Wakashan). So we have to "withdraw" the Almosan-Keresiouan phylum from Amerind and "add" it to Sino-Caucasian (or Dene-Caucasian; this latter term seems better). Nikolaev has come, as early as 1980, to the idea about Sino-Caucasian character of Algonquian (or, broader, Algic languages) but he did not provide enough evidence: I think this was due to the fact that, in Algonquian, whole series of consonants merged in just a few consonants (for instance, *k, *q, *g, *ɡ, *x, *x̣ and some others merged into one, namely *k), — so it is difficult to make successful comparisons between Algonquian and other languages, especially as rich in consonants (and archaic) as, say, NEC and Sa. Nevertheless, in my notes of this period I labeled Algonquian, Salishan and Wakashan languages as "Sino-Caucasian" (which was, partly, influenced by the fact that the pronouns of the 1st and 2nd person in these languages were definitely non Amerind, but, rather, Sino-Caucasian; they were not Nostratic either).

If we consider Salishan (and other Almosan-Keresiouan languages) as Sino-Caucasian, we will be able to make Sino-Caucasian reconstruction more precise in some points (namely, where Salish preserves archaism when compared with existent SC reconstructions).

I am going to cite a few sets which indicate that the reconstruction of SC roots may be corrected in some points:

27. Starostin's SC *-p/bVHV 'heat, burn' (based on ST *p/bu-, *bhu- and Yn *pV-, *^{ʔ}a-pV-) may be changed to *p'/pix̣^{w}-, according to Sa *p'ix̣^{w}; since SC *p' is an extremely rare consonant, SC *p'/p- fits better, — indeed, this latter

reconstruction corresponds to ST *b, *bh and Yn *p. Indirectly, a high archaism of Sa root is corroborated by Ns *p'iɣwV (where *ɣ is an uvular fricative).

28. Starostin's *qwVlV 'die, kill' is based on NC *ʔi-lqwV and Yn *qo-, *-VqV-; both NC and Yn allow the reconstruction of SC *q' as well; Sa *q'ʷulʔ 'die, kill', combined with ST and Yn data, may lead us to a reconstruction SC *q'wVlHV (cf. also Ns *q'o(H)lV id.).

29. Starostin's comparison of Ns *ɬəp'V 'to cover' with ST *lup seems correct; SC might have had *λ'- and *-p- , as well as other consonants in the root. Sa *λ'əp 'cover' (as in Sq λ'əp 'cover, clothing') allows a reconstruction SC *λ'VpV 'cover'; cf. Afro-As. [*ĉ'VpV] 'bark, shell' (in West Chadic: O. Stolbova).

30. Starostin reconstructs SC *-qV 'fluid, drink' (NC *ʔV-qV, ST *Ku, Yn: Ar. -ag-); Sa has *(-)qʷu 'drink, water' (cf. Se). It seems possible to reconstruct SC *-qwV (Ns *ʕaq'u is possible).

The vowel -i- in Sa word for 'muddy' (Sq tɬqʷ) makes it possible to reconstruct *-i- in the appropriate SC root (Starostin has *dVQV 'clay'). This confirms, indirectly, the reconstruction *-q- (and not *-k-) in Ns *diqV 'earth, clay'.

Starostin's comparison of Ns *t'əlV 'young (of animals)' with NC *λ'ələhə 'lamb' seems to me not substantiated enough; Sa has a word in *t'- with the same meaning as Ns; as the NC word is concerned, it seems to be onomatopoeic. (On the other hand, Starostin's comparison of Ns *[t']ajlV 'stone' with NC *λ'əɬV might be correct, though I am not sure that the NC is more archaic then Ns in this case; NC glottalized lateral might originate from *t'j- or the like: cf. Altaic *tᶜiāĺ-; there are no more sets with Ns *t'- versus SC *λ'-).

There are many Sa-Ns sets for which the SC does not show any cognates (at least, it seems so), cf. e.g. Sa *kʷ[a]yʔ 'dawn' (Se kʷɬ́y): Ns *goHjV id.; Sa *kʲʷiyʔ 'quiet': Ns *K'oj(H)V 'lie, rest'; Sa *λ'ə́kˈ 'pierce' : Ns *ɬük'V id.; Sa *t'əlʔ 'wolf' : Ns *t'u[lɣ]V 'jackal', Altaic *tᶜulkE 'wolf', etc. Such correspondence should be considered not as Am:Ns, but as SC:Ns sets (I am sure, SC languages of Eurasia preserved respective roots as well).

In many cases, Sa fits almost exactly the reconstructed SC roots which underlines a very high archaism of Salish: Sa *c'əmʔ 'suck' (as in MC c'əm'-əm) : SC *čwVmV 'chew, hold in mouth' (*-H- seems to lack in the SC reconstruction; cf. also Ns *č'VʕmV 'eat'); Sa *q'əm 'swallow' (as in Sq, Shuswap): SC *q'VmV 'eat, hold in mouth'; Sa

*ɬukʼʷ (as in Coer d'Alene), *ɬkʼʷu- (as in Kalispel) 'recall, remember' : SC *-lVkʼωV 'recite' (cf. *ɬ in Ns *ɬokV 'collect, count') etc. In some other cases, Sa is closer to SC daughter languages.

I hope the above data show the possibilities to make some points of SC reconstruction more precise, and to demonstrate that both SC and Ns are even closer phonetically than it was stated in Starostin's pioneering work.

* * *

This volume contains papers on language and appropriate culture as shown through language, on the one hand, and on language comparisons, on the other hand. There is a considerable amount of Indo-European and Afro-Asiatic data, as well as materials from "Eastern" languages (Altaic, Austric) which are usually neglected in general collections like ours. There is again a section on reconstructions which includes an alphabetic list of Nostratic roots (and their representations in main daughter languages) according to all three issues of Illich-Svitych's Nostratic Dictionary (which is not finished yet). All this — in anticipation of a publication of the whole volume of Illich-Svitych's dictionary: there is a translation of this dictionary being made in the U.S., whereas in Russia a work on re-writing of the dictionary, with inclusion of new material, elimination of obsolete data (which are surprisingly few), etc., has been undertaken by Vladimir Orël and his colleagues. Unfortunately, a flat refusal of a national American foundation to provide funds for the translation of Illich-Svitych's dictionary about a decade ago (a decision made on the basis of reviews of some so called experts, both ignorant and arrogant, which contradicted the opinion of the majority of reviewers) enormously hampered the comparative work in the West, — especially in America. (A recent discussion in the bulletin Mother Tongue showed that many linguists who could strongly benefit from a translation of the Nostratic Dictionary simply had no knowledge about the existence of Illich-Svitych's book).

V.S.
November 1989

LANGUAGE AND CULTURE

ANCIENT EASTERN AND SOUTHEASTERN ASIA: COMPARATIVE-HISTORICAL DATA AND THEIR INTERPRETATIONS (PRELIMINARY REPORT)

Ilya Peiros

With the advent of two revolutionary scientific concepts, the macrofamily and the classification of ancient languages, we can now study in detail how linguistic and ethno-linguistical situations developed in ancient Asia. New linguistic data have led to several hypotheses on the flow of these processes in the east of the continent. But we still have a relatively small amount of knowledge of the Far Eastern languages, contemporary and ancient, compared to what the specialists of Near Eastern languages have at their disposal. As a result of this marked disadvantage, our findings have been less substantial.

There are very many languages in the region. According to the most modest estimates, there are around 800–850. The largest group (of over 600 languages) is the Austronesian family, followed by Sino-Tibetan (over 100 languages), Austroasiatic (70–80 languages) and Para-Thai (nearly 50 languages).

The Sino-Tibetan languages are generally located to the north of the other families. They are divided into approximately 25 individual groups, no more than ten of which (including Chinese, Lolo-Burman, Gurung-Tibetan, Kuki-Chin, and Kachin) have been studied in depth. Chinese plays an important role in the family: it is the oldest written language of the region, exerting a great influence on many neighboring languages.

There is at this moment no established way to classify the Sino-Tibetan languages genetically; that is, it is impossible on the basis of reliably discovered innovations. Several alternative schemes have been suggested, each of which is highly problematic. S. Yakhontov proposed the following, which, being based on the available lexico-statistics, cannot be regarded as a proper genetic classification (Yakhontov MS; cf. Glover 1974):

A. Chinese group: Chinese
B. West Himalayan group: Kanauri and others
C. Central group
    1. East Himalayan subgroup: Litbu-Rai language and others
    2. Nevari
    3. Bodo-Baga-Kachin subgroup: Bodo-Garo, Naga, Lu, Kachin
    4. Tibetan-Burman subgroup
        a. Tibetan languages: Tibetan, Gurung, Kaike and others
        b. Tanguto-Burman languages: Tangut, Tsyan, Lolo-Burman
        c. Kuki-Chin languages: Lushei, Thankur, Mikir and others
        d. Abor-Miri languages

e. Kam
f. Chepang
g. Nung-Trung languages

This scheme, giving a rather simplified picture, is not far from the empirical findings on how the Sino-Tibetan languages are related to one another, although Chinese could fit in as part of the central group instead of being itself one of the three fundamental groups of families.

It seems that such a classification needs a separate division for the Sino-Tibetan languages of Nepal and India. West Himalayan languages do form one of the essential family groups; however, two of the Central group's four subgroups (East Himalayan and Nevari) consist completely of languages from that region. Unfortunately, most of these languages have been studied only very superficially.

The comparative-historical study of Sino-Tibetan languages has been going on for a long time, but significant results have only emerged in the past 20–25 years. R. Shafer (1966–1974) was the first to fully establish the structure, the minor groups, and the most general rules linking the Sino-Tibetan languages. Thus, a great many Sino-Tibetan roots came to be discovered. P. Benedict (1972) used Shafer's data to determine the family's structure and to produce a more thorough comparison of these languages. And now, Sergei Starostin and I have completed the first version of a comparative vocabulary of Sino-Tibetan. The comparative phonetics for this family is based on this work. Because all the Sino-Tibetan data that I will be referring to here are contained in this unpublished work, let us now consider it in detail for a moment.

The vocabulary was constructed by comparing the five Sino-Tibetan languages that had the most complete vocabularies: Chinese (in Starostin's ancient Chinese reconstruction), Tibetan, Burmese, Lushei, and Kachin. We had to exclude the Himalayan languages from the comparison because they have already evolved into higher speech. Therefore, one might suggest that the lexicon reflects not Common Sino-Tibetan, but something else (for example, East Sino-Tibetan). However, this has yet to be verified, so the following discussion will consider this possibility.

In interpreting these comparisons, we had to collect materials from all three old-written languages of the Sino-Tibetan family and put each class of languages under a specific genus. We also had to take into account the well-known mass borrowings from Burmese into Kachin. And apparently, Tibetan had borrowed a number of words from Chinese. But at the same time, there had been no borrowings from Chinese to Lushei and none from Ancient Chinese to Kachin. And there were no borrowings between Lushei and Kachin, or

between Tibetan and Burmese. Thus, at least part of the comparisons would be free from mutual borrowings.

We analyzed the cultural lexicon, because it was available in the Sino-Tibetan vocabulary. It has a rich terminology connected with different property relations; for example, "to buy", "to borrow", "to get paid back a loan", "rich", "poor", "price", and others. The root, "money, change" also reconstructs: *răjH: Tibetan dra "small copper coin", Burmese prah "small change", Lushei ṭai "to change (money)". It should be noted that the given meaning is secondary; but as long as one can compare the parent form, it is pointless to take other semantic items. The root is present in some synonyms for "war" (4–5 other roots), "to steal" (also 4–5 roots) and others. It is interesting that in the parent language there is no reconstruction of the root "slave", but a word with this meaning exists in individual languages, derived from the original word meaning "foreigner, representative from another people".

There are many roots comprising a group of certain religious concepts. Up to this point some roots have been identified, including "to conjure, to pray, altar, memorial, sacrifice", some names of spirits, and "dragon". There are two roots available with the meanings "chief": *ʒəH and *ṭŏH; they appear to be a source of borrowing for the languages of many neighboring peoples. Close in meaning to them is the root *ŋă "to direct (country, chariot)".

There is another group of roots, all associated with transport, including two names for a cart, "to board a wagon (?)", and the word for a harness. A notable exception that no word meaning "horse" could be reliably constructed in the parent language.

A similar list of roots may be added, which would include the names of a variety of herbs and vegetables, livestock (wild and domestic), metals (bronze, silver, gold, and maybe iron: ĉh[ia]k: ĉhit "iron", Tibetan lčags "iron", "lock", Burmese khajak "latch", "bolt", and many more terms like "lock" and "brick". Apparently, the people speaking Common Sino-Tibetan had a rich material and spiritual culture, in sharp contrast to the majority of their contemporaries and the later peoples of East Asia.

Very recently, an explanation of the deep genetic ties of the Sino-Tibetan languages has been worked out. Starostin demonstrated their relationship with northern Caucasian and Yeniseian families, and united these three families into a Sino-Caucasian macrofamily (1982).[1] The original homeland of the Sino-Caucasian macrofamily was apparently in

[1] In a paper at the Nostratic seminar in 1983, S. Nikolayev proposed such a hypothesis on how the Sino-Caucasian languages and the Na-Dene languages were related. But since Nikolayev draws from Sino-Tibetan materials in his work only sporadically, I will not discuss these problems here.

western Asia, possibly in Anatolia. After the macrofamily divided (probably in the 9th–8th millennium B.C.) the carriers of the Sino-Tibetan and Yeniseian parent languages began to migrate eastward. It is notable that the waves of migrants set out independently of each other.

Eventually, the Sino-Tibetan languages made their way into Chinese territory. Whether this happened before the parent language broke up—or even whether they were present in China at the time of the division—is another question, one to which there is still no answer. It is often assumed, without taking the Sino-Caucasian theory into account, that Common Sino-Tibetan broke up in China, possibly in Szechuan (Yakhontov 1977a). But if this is where it happened, then an uncertainty arises about the ancestors of those who introduced the Himalayan languages. What path could they have taken as they migrated in? Movement through Hunan and further to the west along the eastern slopes of the Himalayas was extremely difficult, though just such a journey brought the carriers, or their immediate ancestors, of the Sino-Tibetan languages.

The languages most removed from their ancestors (in other words, the languages that major classifications categorize separately from their earlier forms) seem to be the Western Himalayan languages.

Assuming that the carriers of the Sino-Tibetan parent language set out from the west, it is possible to present yet another scenario, where the breakup of the parent language took place considerably more to the west. This would mean that some ancient Sino-Tibetans went south into India, then on to the common path of migration through the Hindukush, and further along the southern slopes of the Himalayas to the east, paralleling the movement of the northern group. Part of the peoples of this northern group then would have begun to settle the Himalayas from the east. The differences of these two hypotheses deal only with the places of separation of the Himalayan languages, which is not dealt with in comparative-historical analysis.

The breakup of the Sino-Tibetan parent language (according to the first hypothesis) or only the eastern Sino-Tibetan parent language (the second hypothesis) happened in Chinese territory, explaining the linguistic connections between Sino-Tibetan and Austronesian (see below). In any case, no linguistic data points to Szechuan or any other specific place where the parent language divided.

The time when the Sino-Tibetan parent language split up is established only approximately. By lexico-statistical calculation one is able to arrive at the border of the 7th and 6th millennia B.C. Yakhontov names the 8th millennium, but this data produce too many discrepancies (1977).

Evidently, the area that is now China was colonized by the time the speakers of Sino-Tibetan languages appeared there. Apparently the native colonies partly spoke Austro-Thai and Austro-Asiatic languages. The Austro-Thai family, of which P. Benedict hypothesized the existence (1975), is composed of two language families: Austronesian and Para-Thai.

The Austronesian family is, in all likelihood, the largest and one of the most studied language families in the world. Much work on individual languages and groups is being published, including a number of dictionaries and comparative-historical studies—and yet it is impossible to name a satisfactory study of the Austronesian family. There are some explanations for this, and it is not so much the lack of thorough studies on many of the Austronesian languages and language groups. More significant is the state of the vast factual material on the separate languages. It is in every respect highly complicated. At the moment not many linguists study Austronesian as a whole; the majority of Austronesianists limit themselves to to the study of the individual language groups: West-Austronesian or Oceanic. The only uniting work remains the classic research of O. Dempwolff (1934–1938).

For almost 50 years linguists have been trying to define the complete phonetic system for Dempwolff's reconstructed Austronesian parent language. There are usually two ways of going about this task: searching for new contrasts in the languages of Taiwan, and checking the existing reconstruction against material from individual West Austronesian languages. Ultimate success rests largely on putting these two types of investigations together.

Several authors are in favor of making drastic changes in Proto-Austronesian's phonetic system to reflect certain Taiwanese languages. Most make a difference between *t and *C; some between *S and *q, and a host of other discrepancies that were allegedly conserved in Tsou-Rukai languages (for a survey of problematics see Dahl 1981 and others). However, after analyzing these Taiwanese languages in detail, I have come to think that most of these contrasts are secondary: they do not reflect distinctions in the parent languages (Peiros 198–). Still to be explained are the differences between *n and *ɬ, which could in fact point to two differing units within the Austronesian parent language.

Although the common features of the phonetic system of the parent language are pretty much well-known, it is impossible to consolidate anything similar for the lexicon. No one has reconstructed the Austronesian vocabulary in detail. Therefore, researchers have to use Dempwolff's dictionary as the fundamental source from which they cite the data of all 11 languages: 6 Western Austronesian and 5 East Oceanic. As an example of how unfit this list is in its distribution of the roots, it may be noted that according to the lexico-statistical

classifications of Isidore Dyen (1965), which most specialists nevertheless reject, Austronesian languages appear in 40 equal groups, whereas all those languages that Dempwolff enlisted fall under a single group.

Blust's table (1981) can give us one representation of the Austronesian tree:

I. Taiwanese languages (3 independent groups)
II. Malaysian-Polynesian languages
  A. West Malaysian-Polynesian languages
  B. Central-Eastern Malaysian-Polynesian languages
    1. Central Malaysian-Polynesian languages
    2. Eastern Malaysian-Polynesian languages
      a. East Kalmuck-Western New Guinea languages
      b. Oceanic languages

Blust himself notes that there are certain features that the Western Malaysian and Polynesian languages do not share, but he says that they belong in one group because the other categories differ so remarkably from them. The last part of this statement is prone to objection; I would say that the existence of Oceanic groups is far from obvious. It is possible to speak with confidence only that the Central Pacific (Fiji-Polynesian) groups exist and, possibly, wider eastern Oceanic groups.

Thus, the Austronesian reconstructed root is a bit odd. We can reliably reconstruct its phonetic makeup and semantics, but its sphere of influence and the exact time it entered the language is not perfectly clear. This series of papers will look closely at the problems of localizing the parent language and analyzing the cultural lexicon of Austronesian languages. For now, we merely note that the ancient parent homeland of the Austronesian languages can be placed in China.

Para-Thai languages fall into 6-7 groups: Thai, Kam-Sui, Ong-be, Li, Lakkia and one or two groups of Kelao languages. According to the present glotto-chronology, the Para-Thai family divided almost four thousand years ago; and by then, the Para-Thai languages were fairly widely distributed "down the Red River and Sitzyan and in the seaside regions between them" (Yakhontov 1977:104). This is exactly the place from which the speakers of Para-Thai would later migrate.

Having studied in detail the comparative phonetics and vocabulary of Para-Thai languages, one can now analyze the cultural vocabulary of the proto-language. In so doing, one must keep in mind how greatly Chinese influenced each branch of the Para-Thai languages; borrowings from Chinese frequently replaced age-old Para-Thai words. Such

borrowings are abundant except in dialects and Kelao. The latter group has been poorly studied; and although no Para-Thai roots have been found for these languages, a number of Para-Thai words might well have been missed by such a comparison. The lexicon shows that there were fewer speakers of Para-Thai proto-language than of Sino-Tibetan: their language lacks names of metals and terms connected with war, theft, and transport. All that is present are several terms designating property relations and religious concepts: ?-iam^{A}, *hni^{C}, "debt", Rmāŋ^{A} "spirit, devil". There are some roots linked with working: *Cbla^{C}, *mīt "knife", *[R-d] [e]p "sickle", *twau^{A} "weaver's loom", *rw[-i]a^{A} "boat", *hna^{C} possibly "oxcart", and a few others.

The most interesting and rich array of words to appear concerns farming. Here we note: *?rai^{B} "field" (exactly what kind is not fully established); *fāi^{A} "a dam or dike in the field" (evidently a rice field); another possible type of dam *gǎn^{A}; and even "canal", *hmijāŋ^{A} (this reconstruction is somewhat doubtful). We also know some roots associated with rice-growing: *kl[a]^{A} "rice seedlings", *c[h][r]ān^{A} "the cleansing of rice",[2] *Ctān^{T} "to reap rice", and a few others. We note as well a very small list of names for domestic (?) animals, of which only *hŋwa^{A} "dog", *hŋwu^{A} "pig", *gwāi^{A} "buffalo", and *?iap "duck " have been reconstructed.[3]

The Austro-Thai family appears to have divided by the 7th or 6th millennium B.C. (Yakhontov 1977a). Because there is no reason to suspect that the Para-Thai languages came to the continent through migration from the islands, the forefathers of all Austro-Thai languages must have lived in the continental regions of southeastern Asia. Here it is interesting to note that no part of the Austro-Thai lexicon pertains specifically to the sea. The study of the Austro-Thai parent language is just in its first stages. Almost all discoveries in the Austro-Thai lexicon can be found in the works of Benedict's original Austro-Thai theory. However, most of what the author has put together, in light of these and other considerations, does not present a conclusive picture; the work can only serve as a list of about 150 ostensibly Austro-Thai roots.[4] The phonetics of the Austro-Thai parent language are not nearly as well-known. Only general rules are established using two-syllable Austronesian roots with one-syllable Para-Thai (Yakhontov, personal communication)

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[2] Compare with the ancient Chinese *cānh "good grain."

[3] Each Para-Thai language borrowed the name for "chicken" from Chinese.

[4] The distribution of roots in Austronesian languages is not taken into account; therefore, this list just gives the local representations of the roots.

The lexical material reflecting the culture of the speakers of proto-Austro-Thai is very small. Let us look at just a few of the most interesting examples:[5]

1. "Arum" or "Taro": AN *biγah ~ PT *P-ʔr[i]ak; "cotton": AN *kapatʼ ~ PT *xw[ai]^{B}; "sesame": AN *ləŋaʼ ~ PT *Rna^{A}; "indigo": AN *taγum ~ PT > Thai *h-rōm^{A};
2. "Knife": AH *malat (Blust 1973) ~ PT *mit; "onion", "to shoot": AN *panah ~ PT *hna^{ʕ}; "boat": AN *qabaŋ (Blust 1973) ~ PT > Thai *ʔbāŋ^{A} (this and the previous roots also show up in Chinese); "boat": AN *paḷahuʾ ~ PT *rw[i]a^{A}; a more questionable reconstruction of the roots "hoe, hatchet": AN *pankuḷ ~ PT *khwān^{A}, as the PT form of the more recognizable ST *kwhār "knife";
3. "Pig": AN *babuy ~ PT *hŋwu^{A} (the AN root probably means a wild pig); "livestock": AN *kəbav ~ *ləmbuʾ ~ PT > Kam-Suis *bo^{ʕ};
4. "To weave": AN *dandan ~ PT *ch[r]ān^{A} (conformity to the initial consonant is beyond doubt)
5. AN *maqaŋ "to cast a spell" (Kulland, oral communication ~ PT *Rmāŋ^{A} "spirit, devil".)

All other lexical comparisons that I know of tell us hardly anything else about the culture of the people who spoke the Austro-Thai proto-language. There are gaps in the list of the names for metals and grasses (most notably, rice). Here one may make a conjecture that the Para-Thai proto-language preserved of the practical vocabulary the same cultural lexicon that proto-Austro-Thai did, having added to it only only rice-growing terminology.

With the discovery of the Austro-Thai languages in comparative-historical investigations in east and southeastern Asia, another theme has emerged, deserving special attention: How have the Austro-Thai and Sino-Tibetan languages influenced one another? Benedict, in investigating Austro-Thai, has attempted to show that the Sino-Tibetan languages, especially Chinese, have borrowed a great deal from the Austro-Thai proto-language. He cites a long list of hypothetical borrowings to confirm this. But this list looks like a striving to explain every possible coincidental item as a borrowing from the Austro-Thai parent language. And even then, when a root does occur in an Austro-Thai language, it is always one from the Para-Thai branch—where there is an abundance of Chinese borrowings. Therefore, many citings of P. Benedict comparing Austro-Thai and Sino-Tibetan are better explained (to match the composition and established traditions) as

[5] It is customary to cite the reconstructions of O. Dempwolff.

new borrowings from Chinese. However, not all similarities between Austro-Thai and Sino-Tibetan words can be explained that way. There are in fact many ways to approach the relationships between the Sino-Tibetan languages and the Austronesian branch of Austro-Thai. We will look at just three of them:

1. ST *lam "road" ~ *Zalan (Blust 1981) "road"
2. ST *[c/z]am "bridge" ~ AN *(ha)ReZan (Blust 1981) "stairway"
3. ST *lam "sazhen" (2.13 meters) ~ AN *kilan (Blust 1980) "span"

The number of these roots is fairly great, whereas among them are Sino-Tibetan roots with Chinese reflex ("sazhen"), and without it ("road") There are likewise several Chinese-Austronesian approaches.

It is possible to determine the direction of borrowing in several cases, based on when the parent languages broke up. Here is what we have found:

Parent Language	Time of Separation (B.C.)
Para-Thai	2nd millennium
Austronesian	no later than 5th millennium
Sino-Tibetan	no later than 6th millennium
Austro-Thai	7th–6th millennium
Sino-Caucasian	9th–8th millennium

Thus, if a root shared by Sino-Tibetan and Austronesian turns out to be Sino-Caucasian, it was definitely borrowed into the Austronesian proto-language. Take, for example, the root "to steal": ST *(r-) qhō ~ AN *takaw. On the other hand, if a comparison shows that the Austronesian root comes down from Austro-Thai, then the borrowing is a Sino-Tibetan word. We notice that there are no cases of naturally occurring etymologies that Sino-Caucasian and Austro-Thai have in common.

Sino-Tibetan and Para-Thai are rarely compared; and practically all findings can be explained as later borrowings from Chinese.

Starostin and I have interpreted the correlation in the following way. Before the Sino-Tibetan proto-language broke up, it remained in contact with Proto-Austronesian, one of the branches of the Austro-Thai macrofamily.[6] This contact lasted even after the division

[6] In the comparison, there are roots maximally widespread throughout these two families.

of these proto-languages, which would explain why Austronesian and Western Austronesian have so many parallels with Chinese. Borrowing went in both directions, and each concrete case requires an individual investigation. It can also be interpreted that during that period, the Para-Thai languages were located outside the spheres of these contacts, so that all connections between Sino-Tibetan and Para-Thai are explainable by the mutual influence between the separate languages. It is hard to tell where Sino-Tibetan and Austronesian made contact; to all appearances, the Para-Thai languages had stayed a long time in the area of their hypothetical ancestor before they divided into individual groups. There were no contacts between Para-Thai and Sino-Tibetan up until recent times, so during the 6th–5th millennia B.C. Sino-Tibetan languages were not introduced south of the Yenisei. Therefore, the Austronesian languages and their forefathers should be more northern, possibly even to KhuanKhe. Such an assumption, however, requires further substantiation.

Finally, there are the Austroasiatic languages, the least-studied group in the region. They are divided into a series of groups: Munda, Nicobarese, Aslian, and Mon-Khmer, possibly with Viet-Muong, Khasi, Palaung-Wa, Khmu, and Miao-Yao. I have made a reconstruction of Proto-Miao-Yao (MS), and one of Munda was worked out by Pinnov in 1959, though it is rather questionable. The other families' phonetics and vocabulary are not reconstructed. There is no collective Austroasiatic dictionary, although some roots may be derived through more specialized research.

The Austroasiatic languages hold a series of major problems. W. Schmidt's proposition that the Austroasiatic and Austronesian languages are genetically related has not yet been disproved. Furthermore, some data do support the idea that such a relationship exists. Khmer roots, when compared with the Austronesian reconstruction, reveal a remarkable number of lexical parallels. Of course, many of these are recent borrowings from certain Austronesian languages into Khmer. Some of the parallels, however, might be of a different kind. For example: AN *ɣabi' ~ Khmer jop "night"; AN *baḷun "hut" (AT etymology); Khmer raoŋ "big covered place"; AN *bibiɣ ~ Khmer bəbir "lip"; AN *buna ~ Khmer phəkā "flower"; AN *gadiŋ "elephant bone" < "elephant" ~ Khmer khədiŋ "wild bull", and others. It is important that all cited Khmer roots have an etymology (Mon-Khmer or more general). The gathering of other Austroasiatic languages widens a similar list. Therefore, a thorough study of Austric unity is in order.

At present, there is no hypothesis for when and where the Austroasiatic proto-language was spoken. It is also unknown whether the Austroasiatic and Sino-Tibetan languages made contact with each other in the far past. The lexical comparisons between the

Austroasiatic and Sino-Tibetan proto-languages would have it seem otherwise. Individual languages, such as Proto-Miao-Yao, have definite quantities of borrowings from unestablished Sino-Tibetan sources. Some groups of Austroasiatic languages did come into contact with Para-Thai languages, but at what time and with what exact languages is still unknown.

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ALTAIC AND EAST NOSTRATIC
(PRELIMINARY REPORT)

Karl Menges

In sharp contrast to Altaic and its historical six subdivisions, Uralic represents a considerably less differentiated group of languages. It consists of two Finno–Ugric language families: (1) Baltic Finnic, Volga Finnic, Permian, and Ugric and (2) the geographically and evolutionally farther remote Samoyedic languages. The speakers of the latter have been living in the vast plains in the north of eastern Europe and northwest Asia (i.e., Western Siberia) in a territory geographically uniform—and historically rather eventless compared with the natural environment in which the other Nostratic groups developed in historical times, particularly Altaic and Dravidian, which form, together with Uralic, the East Nostratic group. Whereas the geographical landscape is reflected in the development of the single constituent languages, Uralic shows a much lesser degree of differentiation than does Altaic, being in this, as well as in other respects, quite different from Altaic, and conforming more with Dravidian in the south. Of the Indo-European languages adjacent to Uralic, it is particularly the immediately neighboring Balto–Slavic languages that exhibit similar or identical features, within a geographical and historical setting of the same basic features as those of Uralic. Dravidian seems to hold an intermediate position that—with its historical development and the migration into India—changed in the direction of Altaic, producing a somewhat greater degree of differentiation than did Uralic.

The earliest records of Altaic show a group of a half dozen differentiated languages, spoken in an enormous area, extending over Asia and Europe from the Pacific in the east to the Mediterranean in the west. A basic division into two large subgroups is noticeable: (1) an Outer group in the Far East—Korean, Japanese, and Ryukyu and (2) an Inner group—Tungus, Mongolian, and Turkic. Most outstanding about Altaic is that the peoples who spoke it brought about more powerful ethnic, linguistic, and political expansion over Asia and eastern Europe than did any of the other nomadic groups. Ultimately, a series of Altaic conquest dynasties was founded, starting in eastern and southeastern Mongolia with the Huns. The Huns eventually turned westward, causing the Great Migration of peoples in Europe and the Near East with its ever-shifting alliances with Gothic peoples against the Roman Empire. After the defeat of the Huns on the Catalaunian Fields in A.D. 451 in Eastern Gaul, and the retreat of their defeated tribes toward the Pontic Steppes, a new Altaic conquest group appeared: the Avars, the Zuan-Zuan of the Chinese sources, a Mongolian tribal confederacy that had been defeated in A.D. 552 by the Turkut somewhere

in southwestern Mongolia, and thus was forced to move away, westward, like their predecessors, the Huns. As there are almost no relics of the language of the Huns, the assumption occasionally voiced of a Turkic or Mongolian affiliation of the Hunnic language cannot be supported. Hunnic may very well have belonged with the Inner Altaic languages, surviving as a substratum of the present-day Tavas language and the now extinct language of the Onogurs and Volga-Bulgars, prior to their migration into the Balkans and subsequent Slavicization there (after A.D. 679). The historical as well as the anthropological and ethnographical evidence is in favor of an Altaic affiliation of the Huns; they could even have constituted an additional Altaic group of their own. I maintain the thesis of the basic identity of the Far Eastern and the Western Huns.

Only a hundred years after the defeat of the Huns, the second large Altaic wave, that of the Avars, inundated Europe and became firmly entrenched in the territory of the present-day Ukraine. From there, the Avars started their numerous assaults and looting campaigns against both parts of the Roman Empire. Finally, after a quarter of a millennium, the Avar power was broken by Charlemagne, in a series of major battles fought in the last decade of the eighth century. The remainder of the tribes that could not escape were forcibly settled in the plains of Pannonia (present-day Hungary).

Between this and the next great Mongolian movement, that of the Mongols under Jenghiz Khan, a number of Altaic tribal confederacies came into immediate contact with Byzantium and the Slavic world, but had little or no significance for the Western Roman Empire. These were the Khazars, who ruled over a large territory extending all over the Pontic Steppes, from the Caspian Sea as far west as the Carpathians, in an advantageous position between the two Roman empires. Like the Huns and the Avars, they left no written records, and their language is unknown.

In the eighth and ninth centuries, some Altaic tribal movement led to the formation of a Mongolian confederacy. In the early tenth century, this confederacy conquered the entire northern half of the Chinese Empire and founded the Liao Dynasty (A.D. 907), which itself was thrown over by a predominantly Tungus group, the Zhurchen, who established their Czin (Golden) Dynasty (A.D. 1125), taken over in 1236 by the Mongols.

In the second and third decades of the thirteenth century, using blitzkrieg tactics, the Mongols overran practically all statehoods between China and the borders of the Byzantine Empire. After the victory of Liegnitz (Silesia) in 1241, for reasons of internal politics, the Mongols suddenly called off all campaigns in the Far West. With this, the global Altaic movements were over, and the ethno-linguistic form was shaped, basically with the features it still shows today.

The great Altaic conquest dynasties and the empires they had founded existed until the second decade of this century: that of the Ottomans in the west, until 1918; and that of the Manchus, the Ch'ing, until 1911, in the Far East—with the greatest expansion the Chinese Empire ever had. Whereas in the Ottoman Empire the Turkic language was dominant (and the official language of the Empire) the Manchus in China acculturated and became, in as much as they preserved their native Altaic language, bilingual. Candidates for any state office had to pass examinations in Manchu, as Manchu and Chinese were the two official languages of the Manchu Empire. The Manchus were the bearers of the second and last Tungus conquest dynasty.

Somewhere in Eastern Central Asia the great Altaic movements started, leading over protracted historical periods (roughly between 1500 B.C. and A.D. 500) to the Altaic expansion over the Korean Peninsula and onto the Japanese islands. With Korean, the substrata and historical adstrata exerted a definite, quite strong influence, although this seems to have had a lesser significance with Japanese (and Ryukyu). Besides Gilyak (Nivkh) sub– and adstrata, Korean must have absorbed other groups, of Sinitic or unknown affiliations. The situation in the Japanese islands seems to have been less intricate; in the north, the relatively stronger element was (proto–) Ainu, and in the south it was some northern Austro-Asiatic, Polynesian languages.

Questions of sub– and adstrata are of considerable importance for all Altaic languages during their historical as well as their prehistorical development, due to the various earlier and later contacts—often intimate contacts, where conquest and political dominance led to absorption. These sub– and adstrata in Altaic are not exclusively and not necessarily those from non-Altaic contacts, and could just as well be those of inner-Altaic origin. The agreement between the most basic and essential features, lexical as well as morphological, phonological and syntactic, is less conspicuous in the Outer Altaic languages (Korean, Japanese, and Ryukyu), where not only the features taken from Chinese, but also those of areal origin—in the shape of various sub- and adstrata—have veiled the original appearance of the Outer Altaic languages.

Of the three Outer Altaic language families Korean poses a number of problems due to sub- and adstrata, indigenous in and near the Korean Peninsula. Of the non-Altaic languages still extant in that area, Nivkh (Gilyak) and at a greater distance, Ainu, in their earlier stages, are to be considered as possible and probable substrata, Ainu also with Japanese. There still must have existed languages that exerted an influence on Korean, spoken by some of the then numerous 'barbarian' tribes mentioned in the Chinese historical sources. These sources did not, however, quote any titles used by native chieftains, although this was fortunately often done with regard to various Altaic peoples.

In these languages, it was all but syntax that underwent significant non-Altaic influence and change, whereas in Japanese the phonology of Altaic has been well preserved. In Ryukyu, it seems that the lexicon possesses a smaller amount of Altaic elements. Thus, the primordial Altaic nature of the three Outer Altaic languages was recognized only after Altaic had become better known and Altaicists had begun to explore these languages.

As Turkish had originally (some 180 years ago) been studied as appendix to Islamistics, with Arabic and Persian the center of interest, so was Mongolian studied as an annex to Tibetan and Lamaism, and not as a language of world-conquerors. This same attitude had likewise determined Manchu studies: they were an auxiliary to Chinese textual analysis (all the Chinese classical books and a great part of historical [and other] literature had been translated into Manchu), so the Altaic background of Manchu, just as that of Korean and Japanese, did not arouse any interest. The one-sided concentration on problems of detail, usually dealt with in isolation from each other, or an exclusively lexicological approach concerning questions of genetic relationship, gave rise to the idea of contact and area relationship only, rejecting that of genetic relationship, as if, for the mass of Altaic trees, one could not see the Altaic forest.

Most of a comparative historical search for cognates starts with the lexical material and often neglects other domains of language. Naturally, it is the entire word with which the explorer of little-known or unknown languages is confronted first, and thus the first and basic works concerning the mutual relationship of languages are primordially founded upon the lexical material. This, however, can be very erroneous, as a look at English, Ottoman-Turkish, Malay, Korean, Japanese, or Annamite will show. As time and research progressed, it became evident that phonological and grammatical facts are of no less significance, although even phonology and syntax are vulnerable to influences from outside.

Borrowings throughout, however, appear in a lesser degree than in the lexical stock. This is still recognizable in languages that have lost their morphology to a considerable degree, as, for example, has English. The morphological resistance probably can be considered a language universal. Thus, parallels or even identical features such as affixes are the very fundamentals of a genetic relationship in languages. This is especially important to keep in mind when considering Altaic; as a result of its vast expansion over Eurasia from northeastern Siberia as far west as deep into eastern Europe, the lexical material of Altaic has been shuffled and reshuffled and is strongly interspersed with non-Altaic elements.

As for Dravidian languages, some Indo-European lexical elements are clearly recognizable, but here also cases occur in which it is not certain whether the matter is one of borrowing or one of genetic relationship, for the Dravidian languages are generally not viewed as genetically related to Indo-European, and by many Dravidologists no serious thought is given to the possibility of genetic relationship with other language families—not just Altaic or Uralic. This even though Caldwell, the first great explorer of Dravidian, in his *Comparative Grammar* (1815, 1875, 1913) repeatedly draws parallels with Uralic and Altaic (which he calls 'Scythian'), not a few of which are still valid today.

Supposing a Dravido-Altaic genetic relationship illuminates a number of Dravidian problems, and provides several solutions. One problem is that of Brahui and the migration of the Proto-Dravidians to India from the northwest, which leads to certain conclusions concerning the other language families of India, as Munda and Sino-Tibetan (Tibeto-Burmese), as well as the historical distribution of the peoples of Western Asia. Phonological and morphological features of Dravidian, such as certain developments in consonantism, or participial and gerundial constructions, to mention only a few characteristics, become transparent when compared with their equivalents in Altaic. The Dravidian influence in the morphology and particularly in the syntax of Indo-Arian has a significant counterpart in the influence Altaic exerted upon the morphology and syntax of Slavic, probably even of Balto-Slavic, particularly Old Bulgarian and Old Russian. Underneath all this are found features exhibiting genetic relationship quite recognizable in the morphology of the noun and nominal forms of the verb; with etymologically identical suffixes of case, number, and of certain nomina verbalia, and in the pronoun, although this latter exhibits features of considerable corrosion. Traces of possessive suffixation at the noun can hardly be detected and apparently never developed (unlike Uralic and Altaic) or had been lost, as in the three Outer Altaic language families that do not seem to have ever had possessive suffixation. Opposed to this development is the category of exclusivus : inclusivus, which has survived better in Dravidian than in Altaic. As to Dravidian, this fact may be ascribed to its proximity to Munda.

The East-Nostratic unity of Uralic, Altaic, and Dravidian has become clearly discernable. It is a close unit, related to West Nostratic (Indo-European, Kartvelian, and Afro-Asiatic). Lexicologically viewed, there seem to be closer ties between Dravidian and Uralic than between Dravidian and Altaic, because of the lexical stock that Altaic had developed in different phases of its history, as it lost its genuine word-material in favor of repeated and copious borrowing from other cultures in newly conquered areas. Here, the languages of three cultural spheres are particularly important: (1) China, (2) Central Asia

(later Turkestan), and (3) the West with the lands of greater Byzantium and of the Caliphate.

At the present stage of research, no further languages can be classified with East Nostratic. Whereas Yukagir is most probably an ancient offshoot of Uralic, Chukchi-Kamchadal, although showing some features related to Uralic, stands apart. It remains to be seen whether it, as well as Eskimo-Aleutian, might be considered along the lines of a farther genetic relationship with Common Nostratic, but languages such as Ainu, Gilyak (Nivkh), Yeniseian (Ket), Nahali (in central India), and Burushaski (in the Hunza-Nagar District, Western Himalayas, and Karakorum) can hardly be included in Nostratic. If Elamite is genetically related to Dravidian (a problem with which I have not yet acquainted myself), it must be included in Nostratic, whereas Northwest Caucasian and Northeast Caucasian form, as assumed, the westernmost part of the Sino-Caucasian (or even Dene-Caucasian) macro-family.

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AFRASIAN CULTURAL TERMS
(PRELIMINARY REPORT)

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The following represents a list of reconstructed cultural words of Afro-Asiatic. Each entry starts with such a word. Each reconstruction is based on the appropriate words of Afro-Asiatic daughter-languages, which are also cited.

I. CULTIVATION OF LAND

1. *marr 'hoe' (>Sumerian mar), *mirra 'to hoe'.

Semitic: Akkadian marr- 'hoe, spade', Aramaic (Syrian) marr-, maʾr- 'hoe, spade with an iron blade', Arabic marr- 'spade, hoe', Amharic märämmärä 'to dig', Gurage mirämärä 'to plow a field for the third time'.

Chadic (West): Bolewa mar-, Dera marra, Ngamo mira (Stolbova: < *māra) 'to hoe', (East) Somrai mərə́ 'hoe'.

Egyptian (Old Kingdom) mr 'hoe'.

2. *nigal 'to reap, (reaping) knife, sickle' (>Sumerian Níŋ-ŋáL 'sickle').

Semitic: Akkadian ningall-, niggall- (probably a "reverse" borrowing from Sumerian), Hebrew maggāl, Aramaic mangal-t-, maggal-t- (usually viewed as Akkadisms, but rather looking like verbal nouns <*ma-ngal) 'sickle', Arabic nǯl 'to crop, to till land', mi-nǯal- 'sickle' (looks like a pretty regular instrumental noun derived from the verb nǯl, and not like a borrowed form).

(?) Berber: Ahaggar te-sə-ŋəl-t 'kind of rēd ("reaped" or "cut with a sickle"? The noun is of a verbal origin)'.

Chadic (West): Miya ngəla-tə, Warǯi ngəlatə-na, Mburku gəlatə, Kariya ngaləta 'sickle, (adze)', (Central) Nǯanye ngìla 'knife, sword', Gude ŋgìla 'knife' (reconstructable in Proto-Chadic as *nigal-at).

3. *mi-ḫaru 'to reap (corn)'.

Semitic: Arabic mḫr 'to till land', maḫr-, muḫūr-.

Berber: Siwa miǯər, Ghadames emzər, Shilh mgər, Mzab əmǯar, Qabyle əmgər 'to reap'.

Chadic (West): Bolewa gar, Sura kur 'to harvest', Angas gur 'to collect in great numbers'; (Orël, Stolbova < ḫaru 'to harvest'; cp. also Angas gyēr, yēr 'store-house').

Egyptian (Old Kingdom) mḫr, mḫr 'corn-house'.

4. *kawir 'hoe, to hoe' >*ʔi-kwar >*ʔikkar.

Semitic: Akkadian (Old Babylonian) ʔikkar- 'tenant farmer' (hardly < Sumerian engar), Hebrew ʔikkār, Aramaic (Syrian) ʔakkār- 'farmer', ʔkr 'to till land, to plow', Arabic ʔkr 'to till land, to dig', ʔakkār- 'plowman', Amharic akkara 'to renew the land by plowing and sowing', Endegeñ ta-ʔakkarä 'to build a house and cultivate the field around it for the first time' (cp. Leslau Gurage, 593).

The Aramaic and Arabic verbs, which do not seem denominal, and moreover Ethio-Semitic forms can hardly be regarded as borrowed from Akkadian; the formation in *ʔV-, both verbal and nominal, is known in Semitic, cp. Ugaritic ʔuṣbʿ, Hebrew ʔäṣəbbāʿ, Arabic ʔiṣbaʿ-,

Gəʿəz ʾäṣbaʿ-ət, Jibbāli ʾiçbáʿ 'finger' versus Aramaic (Syrian) ṣebʿ- and Egyptian (Pyramid) ǯbʿ (<*çVbʿ) idem.

Cushitic (South): Iraqw, Alagwa kuru-mo 'hoe', Asa kurim- (<*kuri-m?) 'to cultivate' (Ehret: <*kur- or *kūr-).

Chadic (Central): Lame karuá, Hona kura, Bana kawíra 'hoe', Mesme kúra 'to plow'.

(?) Egyptian (Pyramid) ꜣkr 'earth-god Aker' (determined with the ideogram "patch of land")

5. *ĉa(ʾ)duy 'to cultivate, to dig out'.

Semitic: Hebrew ŝiddēd, Aramaic (Judaic) sdd (Piʿēl) 'to harrow, to plow', Aramaic (Syrian) sad- 'furrow'.

Chadic (West): Warǯi, Miya ŝaḍ, Paʾa ŝaḍu, Kariya, Seya ŝēḍə, Siri ŝada 'to plow, to cultivate'.

Egyptian (Old Kingdom) šꜣd, šdy 'to dig out (a pond, channel)'.

6. *ĉiddaw 'measure of length, land' (may belong to other than agricultural lexicon, say to construction terms.

Semitic: Akkadian šdd 'to stretch, to measure (land, house, frontier, etc.)', šidd- 'measure', Ugaritic šd 'measure of land, portion of field plowed by a couple of oxen for a day'.

(?) Berber: Qabyle i-zdiw 'to be long (of a road)'.

Chadic. (West): Hausa sandā (< *ĉadda?) 'a measure of length (yard)'.

Egyptian (Middle Kingdom) šdw 'plot of land; part of the sḫ-t field', šdy 'to apportion field-plots'.

7. *cima 'to reap, to harvest', *cima-r

Semitic: Arabic ṯmr 'to bear fruit (of a tree)', ṯamar- 'fruit', ṯāmir- 'haricot bean', Sabaic ṯmr 'to produce crops (land); crops (spec. cereals)', Gəʿəz smr 'to be fruitful', Jibbāli ṯ̃r 'to ripen, to come to fruition', s̃-əṯmír 'to get a good harvest (from the palm-tree)', Ḥarsūsi ṯemōr, Soqoṭri tmr 'to bear fruit'.

Cushitic (East): Oromo asmara 'season for agricultural activities, harvest' (cp. also Ethio-Semitic: Soddo asmara, but other Gurage azmara [Leslau Gurage]).

Berber Shilḥ a-səmmaud 'sickle' (presumably a composed word consisting of a-səm < *cim 'reap' and maud < *mūd 'grain', a- being a noun marker [see Destaing Interdictions]), (Ahaggar a-maris 'harvest season' may belong here as a metathetic form, but may as well be related to mars 'March' of Latin origin.); Guanche (Tenerife) beñesmer, venesmer, benismer 'the month of August', benismen (the final -n is < *r due to assimilation to the -n- of the first syllable) 'harvest season' (all Guanche forms are < *we-n-ismer literally 'that-of-harvest', see Wölfel, 482).

Chadic (West): Hausa cima 'an instrument for cutting off the heads of cut corn'; (Central): Kera cémé 'to reap, to harvest (millet)'.

8. *sikwaʾ 'to till land, to hoe'.

Semitic: Akkadian (Old Babylonian) škk 'to harrow', šikk-at- 'harrowed land', (?) Sabaic s k-t 'plow (or harrow)' in: ʾhl ḥrṯ s k-t-n 'folk plowing with a plow (or harrow)' [Conti-Rossini]

Berber: Zemmur, Igeriun səkka, Tafilalt ta-skki-t 'plowshare', Mzab skkə-t 'plow', skka 'to plow, to till land hardly' <Arabic sikk-at- 'plowshare' (in turn borrowed from Aramaic sikk-at- <*cikk-at), in which case the co-existence of Berber forms with and without the -t suffix would have been difficult to explain.

Chadic (West): Hausa sakwa-mi (-mi being an old instrumental suffix like in Semitic?) 'hoe with a long handle', Sura sak 'to hoe, to plow', Tangale suk 'to plow' [Stolbova: <*sak(w)].

Egyptian (Pyramid) sḳ3 'to plow, to till land, to cover seeds with soil', sḳ3-t 'cultivated land, field'.

9. *sukay 'to sow' (very probably related to #8)

Cushitic (West): Kafa, Bworo šok 'to sow'.

Chadic (West): Hausa šuka, (Central): Mbara cok 'to sow'.

Egyptian (Pyramid) sky 'to sow', skw 'sower'.

10. *sVkay 'land not cultivated actually, fallow' (presumably related to #8 and #9)

Semitic: Tigre šeka, šeḳa-t 'field, meadow, valley', Tigrai šäḳa 'water-meadow' (š- <*s).

Berber: Baamrani i-ssuḳi, Ntifa, Zemmur i-ssiki, Tafilalt a-ssiki, Izdeg isiki, pl. isak-at-ən, Izayan a-siḳi, Qabyle a-suḳi, Shawiya a-m-suḳi 'fallow'.

Chadic (West): Hausa šeka 'a piece of waste, uncultivated land inside a compound'.

II. WILD AND DOMESTIC UNGULATE ANIMALS

(In cooperation with V. Blažek)

1. *mar 'sheep, goat'

Sem: Akk (OBab) ʾimmer- 'sheep, ram', Ugaritic ʾmr 'young sheep, lamb', Aram (Syr) ʾemr- 'lamb' (<*ʾi-m(m)Vr)

Cush: Saho ʿAfar márū, pl. maruwā 'sheep'

Chad: Dira marì, Buli mar, pəlčì mār 'goat'

2. *laʾʷ 'bull, cow' (Sem 'wild → domestic cow' > Cush and Chad?)

Sem: Akk lû 'wild bull', litt- (<*līʾ-t-) '(domestic) cow', Hebrew lēʾ-ā 'Leah, proper name meaning 'heifer', Arab laʾā-n 'wild bull', ǯibbāli leʾ, pl. lho-t-i, Soq. ʾəlha (-h-<*ʾ) 'cow'

Cush: Bilin lāû 'cattle', luwí, Awiya luwā, Xamir luwá 'cow', East Cush *loʾ 'cows coll.)' [Sasse], Sidama Darasa Alaba lālo, Kambatta lālu 'cattle (cows and bulls)'

Chad: Dera la, Gudu Kumbi lo, Guḍe lā 'cow', Gudu lə 'bull', Mubi la 'cattle' (Cp. West Chad *laʾʷV 'meat' [Stolbova])

(?) Eg ỉwʒ 'domestic cow' (-ʒ may be < *l or *ʾ)

3. *lVʾ, *lVʾlVʾ 'goat, sheep'

Sem: Akk (OBab) laliw-, lalû, Ugaritic llʾ 'kid', Soqoṭri luloh (-h <*ʾ) 'goat'

Cush: Oromo (Borana) lálē-sa, (?) Iraqw lêʾi, Gorowa léeʾi 'goat'

Berb: Ahaggar elahəy 'wooly ram'

Chad: Gera la 'sheep', Dira la 'sheep, goat', Higi (Ghya) Lame Kera la 'sheep'

4. *ʔʷayl 'sheep, goat'

Sem: Akk (O) ʔāl (< *ʔayl), Hebrew ʔayil 'ram', Arab ʔiyyal- 'mountain goat', Soqoṭri ʔilel-oh (pl.) 'sheep'

Cush: Saho ala 'goats', Saho 'Afar ille, illi 'sheep'(?), Ḳʷadza áli-to 'goat'

Berb: Ghadames tə-ḫəli, Audžila tə-ḫəl, Ahaggar te-hele, Taneslemt te-həle, Semlal Nefusa t-ili- 'sheep' (Prasse)

Chad: Hona ʔwàla 'goat'

5. *ʔayVl 'deer, antelope'

Sem: Akk ʔayal-, Ugaritic ʔyl, Hebrew ʔayyāl, Aram (Syr) ʔayl-, Arab ʔayyal-, ʔiyyal-, ʔuyyal- (Gəʿəz hayal, ḫayal) 'deer'

Cush: Somali ēlo 'gazelle', Gorowa eletemo 'bushbuck', Dahalo ʔèèle 'hartebeest' (Ehret *ʔāle 'sp. large antelope')

Chad: Mbara hùlǔ 'buffalo', Kabalay yilə 'antelope'

Eg (late): ʔyr, Copt yul 'deer' (<Sem?)

6. *ʿawl ~ *waʿl 'ibex, gazelle'

Sem: Hebrew yāʿēl, Arab Waʿl-, Sabaic wʿl, Gəʿəz wəʿla 'ibex, mountain goat', Ḥarsūsi Mehri wāl 'Hemitragus Jayakari'

Cush: Rendille ḥól, Somali ʿawl(-kii) 'Soemmering's gazelle' (Heine *ʿaul)

Eg (Med) ʿr 'goat' (-r < *l or *r)

7. *ʔʷarVw/y '(mountain) goat, sheep' (early Sem > Cush and Chad-Berb?)

Sem: Akk (O) ʔarw-iḫ 'gazelle', Arab ʔurw-iyy-at- 'wild sheep, ibex, chamoix', Sabean ʔrw-y-n 'female mountain goat, ibex', šibbāli ʔɛrú-n, Mehri ḥ-āráw-n, Soqoṭri ʔərʔəhɔ-n 'goats' cp. Akk ʔarm- (also ʔaran-t-, late, considered a borrowing), Aram (Syr) ʔarn- 'mountain goat']

Cush: Rendille ari, Boni éri-ya 'sheep', Bayso arer 'goat', East Cush *riʔ 'goat' (Sasse), Iraqw ari 'goat', ara, Burunge Alagwa ara 'goats', etc. (see Ehret *aari 'goat')

Berb: Ahaggar e-hərə 'small cattle', Ayr E Wlmd e-hərə, Semlal a-hru 'ram', Guanche (Tenerife) ara 'she-goat', hara 'sheep', (Gr Can) taharan (pl.:ta-har-an) 'sheep'

Chad: Hausa ara-ara 'ram, sheep, goat; thin-legged Bornu ram or sheep or goat', Ron (Kulere) wàr, Montol Gerka ur 'he-goat'

8. *ʕ/ʔi-gal 'calf, (young) bull'

Sem: Ugaritic ʿgl, Hebrew ʿēgäl, Aram (Syr) ʿegl-, Arab ʿiǯl- 'calf', Gəʿəz ʔəgʷəl 'the young of an animal', ʔəgʷəl-ət 'she-calf, heifer', Tigre ʔəgal 'calf' (cp. Tigrai Tigre gəlgäl 'lamb', Gurage *gəlgəl 'the young of an animal, lamb') [Leslau]

Cush: Bilin gär, pl. gäl (< *gäl / *gäll, according to Dolgopolsky), Quara gär, pl. gäl-tī 'calf'

Omot: Ometo (Wolamo) Gallua 'calf' (Cush-Omot *gVl-/*gVll- [Dolgopolsky])

Chad: Gedǯi gal 'cow'

Eg (?) ʿg, ʿgn in the beginning of certain terms with the determinative 'bull'

9. *ʿ/ʔʷidar 'herd, cattle'

Sem: Hebrew ʿēdär 'flock, herd'

Cush: ʿAfar wadar 'cattle (goats and sheep)'

Eg (OK) ỉdr 'herd, flock, etc.'

10. *kVr 'lamb, ram, goat' (cp. Illich-Svitych)

Sem: Akk (O) kirr- 'sheep', (Mari) karr- '(male) lamb', Ugaritic kr 'lamb', Hebrew kar 'fattened ram, lamb'

Berb: Ayr, E Wlmd a-kərwa, pl. i-kərwa-t-ă n 'lamb', Semlal ikru 'young ram', Nefusa a-krar 'goat', Ahaggar ẽkrər 'ram', Qabyle i-kərri, pl. a-krar-ən '(castrated) ram'

Chad: Angas kīr 'ram (for fattening)', Dera kwarà 'goat', Seya kərò 'ram'

11. *ĉaʔʷ 'meat of (domestic) animals'

Sem: Akk šûʾ-, Hebrew ŝē, Aram si-t-, Arab šāʾ- 'sheep'

Cush: East Cush *soʾ 'meat' (Sasse)

(?)Omot: Ometo (Wolamo) ašo, Kullo aššwa 'meat', Mao šaaA (Fleming) 'goat'

(?)Berb: Guanche chivato 'young female goat, kid' (čiwa-t- < *ĉiw-?)

Chad: Wardži ŝū-na, Kariya ŝiwi, Paʾa ŝuwi, Miya ŝiwiya, Tsagu ŝu-n, Siri ŝuyi 'meat, animal', Kir ŝo/u, Tala Guruntum Gedži Sayanči ŝu, Ngizim ŝuwai, Bade sàa, etc. 'meat' (Stolbova *ĉaw[a]y)

Eg (MK) šꜣy 'pig'

12. *ŝVH 'cow, bull'

13. *čVb 'antelope, boar'

14. *cVq̓l ~ *cVlq̓ 'wild goat'

15. *ṭaly 'young of hoofed animal' (cp. Illich-Svitych)

Sem: Hebrew ṭālä 'newly born lamb', Aram ṭaly- 'boy', Arab ṭilw-at- 'newborn gazelle, kid', Gəʿəz ṭäli 'goat', Tigrai ṭel 'sheep'

Cush: Somali ḍal-, Oromo ḍal, ʿAfar ḍale 'to bear, to give birth to'

Berb: E Wlmd ā-ḍēl 'calf'

Chad: Hausa tā́lĭ̌-yò 'an animal that is still following its dam; a young child'

16. *baʾʷr-ay 'goat, sheep'

Cush: Somali barār 'lambs', Mogogodo abūr 'sheep'

Berb: Kel Ataram bərw-āya 'ram'

Chad: Bolewa ḅariye 'goat', Buli àm-bèrə 'sheep', Hildi burā, Fali-Kirya bùrá 'goat'

Eg (OK) bꜣ(ꜣ) 'goat, sheep' (< *bVʾr?)

17. *bVʿVr 'bull', 'camel' (Sem borrowing in Berb, Chad and Cush?)

Sem: Akk bīr-, būr- 'young bull', Hebrew bəʿīr 'bull or cow, cattle', Aram (Syr) bəʿīr- 'bull or cattle', Arab baʿīr- 'camel', Sabaic bʿr 'cattle, head of cattle', Gəʿəz bəʿr-awi, Tigrai Tigre bəʿər-ay 'ox',

Amh bäre, Argobba bara, Harari baʾara, Gurage bora, bawra 'ox (for plowing)'

Cush: Beḍauye baʾr-ay 'bull, calf', Bilin Xamir Qemant bira, Awiya birí 'ox', ʿAfar bèʿr-a 'young bull (for plowing)', Highland East Cush *bora 'ox' (all < Ethio-Sem?)

Omot: Čara Zayse bōrā 'bull (or ox)'

Berb: Zenaga ta-barār-t 'she-camel'

(?)Chad: Buduma bárū kāber 'bull', Mokilko burso 'cow'

18. *baʾVr 'kind of antelope'

Cush: Kambatta bora 'oryx (antelope)', Somali bair 'a young deer or antelope', burunge baʾur-a 'oryx'

Berb: Ahaggar e-bərəy 'young of an addax antelope'

Chad: Hausa bàrḗ-wā́ 'antelope', Paʾa ba-bar, Siri ba-bari 'gazella dama'

19. *bVkʷVr 'young domestic animal' (Sem 'first-born' → 'young domestic animal' > Berb-Chad '(young) domestic animal'

Sem: Akk bakr- 'young camel', bukr-, Ugaritic bkr, Hebrew bəkōr 'first-born', bäkär 'young camel, dromedary', Aram bukr- 'first-born', bəkūr- 'young camel', Arab bikr- 'virgin', bakr- 'young camel', bakīr-at- 'date palm bearing early fruit', Gəʿəz bakʷər, Amh bäkur 'first-born', Mehri bôker 'young she-camel', ǯibbāli bɔ́kɔ́r 'to take a female's virginity', bɔ́tkər (T-stirps) '(animal) to have one's first-born', bɔkr-út 'young camel', Soqoṭri békir 'newly born, virgin'

Berb: Ahaggar e-bəkər, Ayr EWlmd e-bă kă r 'young sheep, lamb', Semlal a-bukīr 'kid' (Qabyle a-bakur 'kind of fig-tree bearing early fruit' is probably < Arab)

Chad: Musgum iki binkiri 'he-goat' (iki 'she-goat'), Tera bòkèrè/à 'goat', Dera (pl.) bukur-in 'goats'

20. *bag^{w} 'sheep'

Cush: Bilin bägga, Qemant bäga, Quara baga, Xamir bega, Xamta biga 'sheep'

Omot: Kafa bagē, 'Bworo baggō 'sheep'

Berb: Ahaggar a-baǧuǧ 'lamb, kid', Ayr EWlmd a-bă gog 'young ram between 2 and 3'

Chad: Dera bugu 'male goats', Karekare bagure, Musgu beŋgere 'goat' Fali (ǯilbu) bègà, (Bwagira) Bagən 'sheep', Bačama m-baga-te 'sheep', ƀogur-ey 'goat' (< *bag^{w}-ar)

III. CAMELS

1. *ʿV-lvḳ, *lVḳʷ-Vm, metat. *ḳVl-Vm 'camel'

Sem: Arab ʿalūq- 'she-camel not giving milk', Mehri ʾēlīḳ, Ḥarsūsi ʾalī-ḳ, ʒibbāli ʿayʔóḳ 'a male camel calf still being suckled'

Cush: Sam *qáálìm 'young male camel', *qàálím 'young female camel' (Heine)

Berb: Siwa a-lɣom, Ntifa Tlit sadden a-lɣum, Qabyle a-lɣʷəm 'camel (dromedary)', Ayr EWlmd a-ɣlam 'saddle-camel, caravan'

Chad: Hausa rāḳumī (according to Jungraithmayr-Shimizu, a Berber loan; why r < l?), Dangla lokumo, Tumak loguma (Skinner)

2. *kVrkVr 'camel'

Sem: Hebrew kirkār-ā 'she-camel' (Isaiah)

Berb: Ayr EWlmd a-kərkur, pl. i-kərkar 'camel between 2 and 3 years'

Chad: Logone kúrguma 'camel' (contaminated with Hausa rāḳumī?)

IV. EQUIDS

1. *ʿay/wr 'ass'

Sem: Ugaritic ʿr 'ass', Hebrew ʿayir 'young ass', Aram (Jud) ʿēr-, Arab ʿayr-, Mehri ḥ-ayr, ǯibbāli a-ḥ-yɛ́r 'ass'

Omot: Kafa awarō, Bambeši Mao wOOre (Fleming) 'horse'

Eg (OK) ꜥ 'ass' (< *ʿVr)

2. *q̇ayl 'ass, horse'

Sem: Arab ḫayl- 'horses', Soqoṭri ḫayl 'mare'

(?)Cush: Saho ʿAfar akáalo 'donkey', Somali qàyl 'foal of horse or donkey below 2 years of age'

Berb: Sokna (pl.) t-ɣall-ən 'horses, mares', Smelal a-ɣyul, Seghrušen a-ɣyul 'donkey', pl. ti-ɣalli-n 'horses', Wargla a-ɣyul, 'donkey', Mzab t-ɣalli-t 'mare, horse', Džerba tə-ɣalli-ṯ 'mule', Sened a-ɣyul 'donkey', Nefusa tə-ɣəll-ət 'mare'

Eg (OK) ḫꜣb 'hippopotamus' (< *ḫVl-b?)

3. *kʷar 'ass, donkey'

Sem: Arab ʾakurr- 'colt, foal' (< *ʾa-kurr), (dial.) kurr- 'young of an ass', Amh kʷərkʷər, Gurage *kurkur interjection one uses when calling a donkey

Chad: Bolewa koro, Karekare kwaro, Ngizim kwárá, Bade kooron 'ass, donkey' (Stolbova), budma koro, Ngala kōro, Makri kōro 'ass' (Porkhomovsky), Musgu kurék 'he-ass', kurkí 'she-ass'

Omot: Kafa kūrō Moča kúro, Gimirra (Še) kujr, Čara kurā 'donkey'

4. *dam-Vr 'kind of equid'

Sem: Akk (OBab) damdamm- 'mule'

Cush: Beḍauye damèr, Somali dámêr (and dábêr), Bayso demer 'donkey'

Berb: Zenaga dəmma 'mehari camel'

Chad: Kotoko (Buduma) démde 'colt, foal of horse' (< *dVmdVm), (?) Kera dàaŋà 'mare' (ŋ < *m under the influence of d-?)

5. *dVm-Vl 'kind of antelope, gazelle' (cp. #6)

Cush: Hadiyya damal-iččo 'decula antelope'

Omot: Yämma dumā 'bubalis antelope'

Berb: Ahaggar e-dəmi 'gazelle sp.', Zenaga dāmi 'gazella rufifrons', Sawiya ta-dəmu-t 'gazelle'

6. *pVrV(ʔ) 'kind of equid'

Sem: Akk parû 'onager, mule', Hebrew pärä', Arab fara', Ep SAr fr' 'onager'

Chad: Gerka péru, Mokilko pùrú, Ron (Daffo-Butura) purí, Mwulien puró 'horse'

Cush Somali fáraw 'zebra' (f- < *p or *f; cp., however ǁʷadza falala 'zebra': according to Ehret < *fora/*foda, cp. also Angas fir 'k. of antelope' < *f-)

Omot: Ometo (Wolamo, Čara et al.) farā 'horse'

7. *pVrVs 'horse'

Sem: Hebrew pārāš, Aram (Old) prš (?), Arab faras- 'horse', Sabaic prs_1 'horse, mare', Gəʿəz färäs, Soddo färäs 'horse'

Cush: Beḍayue fàrass, Somali faras, Saho ʿAfar farár, pl. fáris, Hadiyya farašó, Sidamo farašo 'horse' (all < Ethio-Sem?)

Omot: Kafa haraš-ō 'horse' (h- < *p or > *f), Mao farša (Fleming) 'horse' (< Ethio-Sem?)

Chad: Ron(Ša) píríš, (Kulere) púríš, Tera pirši, Hona puršе, Gabin pirse 'horse', Mubi firso 'stallion' (Chad forms are hardly < Arab, since the term is not attested in Hausa which has always been a mediator language for Arabic loans in Chadic; possibly Chad < Arab via Kanuri?)

8. *ʾV-bVr 'horse'

Sem: Hebrew ʾabbīr 'steed'

Omot: Kafa barāyē, Moča bāraye 'mare'

Chad: Sura bèriŋ, Angas brüng, Ron (Fyer) buri, (Bokkos) mbiri 'horse', Dangaleat bòòrā 'horse, mare', Logone mbū́rī, Affade boró, Kuseri bori 'ass' (see Stolbova)

Eg (Din 18) ỉbr 'steed' (< West Sem?)

V. HUNTING, ROAMING, FOLLOWING HERDS (OF WILD UNGULATE)

1. *rV§ 'to follow herds, to migrate'

2. *gaṭ > *ḳaṭ 'hunting (wild) sheep, goats'

Sem: Aram (Syr) qūṭ- 'herd', Arab qawṭ- 'flock of sheep', qawwaṭa 'to pasture, to shepherd'

Cush: Somali úgáḍ 'game animals, prey', ugáaḍ-si 'hunting', Sidamo ugāṭ- 'to hunt'

Berb: Siwa Nefusa t-ɣāṭ, Menaṣēr ɣat, Tuat Gurara Mzab t-ɣat (< *-ɣaṭ-t) 'goat'

Chad: Gera, Ron (Ša) gaḍ- 'to go hunting, to hunt'

3. *ḳVd 'flock of sheep, goats; to follow flocks'

Sem: Akk nâqid-, Hebrew nōqēḏ, Aram (Syr) nuqd- 'shepherd', Arab naqad- 'sheep of weak race' (all < *nV-ḳVd)

Omot: Kafa Moča qiddo 'shepherd, herdsman'

Berb: Ayr EWlmd a-ɣadɣad 'flock of goats'

4. *g^{w}Vr 'corral, enclosure (made of stone)'

Sem: Amh g^{w}ärrätä (T-stirps) 'to build a coarse structure by piling up stones', Wolane girrä-t 'stone wall' (cp. Akk ʾigār- 'wall', Aram ʾîgâr, ʾeggâr, ʾegâr- 'roof', etc., all considered a Sumerism; see S. Kaufman, The Akkadian influences on Aramaic)

Berb: Ahaggar a-ḡror 'enclosure made of dry stone', Išqern a-grur 'row of stones', Sus a-grur 'enclosure, pen', Nefusa a-yrur 'dry hedge',

Guanche (Palma) tigorte 'enclosure for cattle' (ti-gor-te), Tenerife Gr Can Palma) goro 'corral for small cattle' (Wölfel)

Chad: Mbara gúrù 'enclosure for cattle'

5. *dVb-n 'enclosure for trapping ungulate animals'

Sem: Aram (Syr) debn- 'enclosure (for cattle, horses)', Arab dibn- 'enclosure in the open pasture-site'

Cush: Somali dábníin 'act of trapping', dábiní- 'animal trap', dábad (obsolete) 'a trapper'

Chad: Hausa dabi 'a thatched roof resting on poles, a hunter's covered platform' (cp. dabaibayi 'hobbling forefeet of an animal')

6. *g$^{(w)}$Vĉ 'to migrate, to roam from place to place (for pasture?)'

7. *pVɳ 'trap'

VI. DWELLING

1. *ʔa-bVl 'door'

Sem: Akk ʔabull- (> Sumer abul?), Hebrew ʔūbāl (hapax legom.), Aram (Syr) ʔabūl- 'gate'

Cush: Xamir bila 'door', Quara bela 'opening, window', Oromo balbala 'door'

(?) Berb: Ahaggar e-bələl 'breach, opening (in the rock)'

Chad: Seya ḅil (ḅ < *bH), Buli bèla, burma ḅél-kəpsì (kəpsì 'hut') 'doorway'

2. *ḥʷn̰ 'camping, setting up a tent'

3. *ḥʷVĉVr 'fenced camp, compound'

Sem: Hebrew ḥāṣēr 'camp, court-yard', Phoen ḥṣr 'court-yard', Aram (Syr) ḥir-t- (< *ḥiʿr-t- < *hiĉr-) 'camp, fortress', Arab ḥaḍar- 'area inhabited by settled population', Ḥarsūsi ḥeẑáwr 'to migrate from the desert to the town in summertime to get water' (cp. Sem *ḥVĉVr: Ugaritic ḥẓr 'farm-stead', Arab ḥẓr 'to enclose with a wall', ḥi-ʒār- 'enclosure, pen', Gəʿəz ḥṣr 'to enclose with a bank')

(?) Cush: Beḍauye esēr-, Solmali iǯar- 'enclosure, pen', Oromo iǯar 'to fence', Ślidamo huṭa 'fence, fenced-in ground', Hadiya ōṭoro 'court-yard' (cp. Dolgopolsky; correspondences are not secure)

Berb: Guanche (Gr Can) ajodar, axodar (< *a-Hodar < *a-hoĉar?) 'fortified site, fortress'

Chad: Nǯanye hwuḍɛ, Gudu hwódócü (< *HʷVḌV-t-?) 'compound'

4. *q̓Vi̯/u̯m̯ 'tent, hut'

5. *q̓Vn 'hut, tent, home'

6. *gau̯r 'community dwelling of neighbors (kinsmen?)'

Sem: Hebrew gār 'to dwell as a guest (of a foreigner)', Arab ǯār- 'neighbor', ǯwr (A-stirps) 'to live close by', Gəʿəz gor 'neighbor', Tigre Tigrai gwr (T-stirps) 'to be a neighbor', Amh gorä-bet 'neighbor', Harari Selti Zway gār 'house'

Cush: Beḍauye gáʾra, gárʾa 'courtyard', Somali gurä 'house', (?) Hadiya ǯägara 'small house' (Semito-Cush parallel proposed by Dolgopolsky)

Berb: Ghadames gurār-en (pl.) 'public water-closets'

Chad: West Chad *garV 'village, town' (Hausa gàrī, Gwandara geri, bolewa gorwu, Ngamo gargu, Dwot gèri [Stolbova] ǯegu géer 'house', 'village', Mubi gir 'house', Logone gáura 'shed', Mbara gìrɨmɨ 'hut'

7. *cVb 'wall, fence'

8. *ṭVṗ 'lidded opening in the roof (of the dug out?) serving as a door'

9. *bVnVw/y 'stone building, superstructure'

Sem: Akk bny 'to build, to create', Ugaritic bny 'to build', bnw-n 'edifice', Hebrew Phoen Moab Aram bny 'to build', biny-ān-

'edifice, building', Arab bny, Mehri benû, ǯibbāli bené, Soqoṭri béne 'to build' (cp. Sem *ʔabn 'stone')

Berb: East Numidian bn 'home, family, wife', bny 'to build (?)' (bn 'stele' < Eg?), Ghadames əbni, Semlal bənna, Nefusa ebna, Qabyle abnu 'to build' (probably not Arabic loans)

Chad: Hausa bēnē 'upper store', Bolewa bono, Karekare ben, Logone vènì 'hut', ǯonkor bínnì 'hut', Mube bēni 'to build'

Eg (MK) bnw-t 'sharp stone (for construction), millstone', bnbn 'stele', bnbn-t 'top of stele or pyramid'

10. *bir(-Vn) 'fortified house, settlement'

Sem: Akk bīr-, pl. bīr-at-, bīr-ān-āt-, Hebrew bīr-ā, pl. bīr-ān-iy-ōt, Aram (Syr) bīr-ət-, pl. bīr-ān-āt- 'fortress, fortified building (temple, palace)'

Chad: Hausa birnī, pl. birānē 'wall, town', Ron (Fyer) bur, Mandara bìrè 'hut', Bačama vùrà-to, Gudu vúrá-čü (-č- < *t) 'town' (cp. Mbara bàr 'to cover a house')

11. *ḳ$^{(w)}$Vr 'house, collection of houses'

Sem: Ugaritic qry-t, qr-t, Hebrew qiry-ā, Aram (Syr) qərī-t-, Arab qiry-at-, Sabaic qr 'town', ǯibbāli ŝírḗ-t (< *ḳiry-) 'town, collection of houses'

Berb: Ahaggar a-ɣrəm 'town, village, fortress, palace', Izayan iɣəlm 'town, village' (-l < *r), Mzab a-ɣərəm 'town' (< *ḳVr-Vm)

Chad: Karekare kwaro 'farm, house', Matakam kwokwaŭ 'town'

Omot: ḳera 'home, habitation' (Fleming)

12. *bVt 'hut, house'

Sem: Akk bīt-, bēt-, Ugaritic bt , Hebrew bayyit, Aram bayt-, bēt-, Arab bayt-, Sabaic bt, Gəʿəz bayt, Amh bēt 'house', Goggot bet 'house, dwelling, room', Mehri beyt, bêt, ǯibbāli bet, Soqoṭri beyt 'house'

Berb: Ntifa ta-but 'mud-house' (< *ta-but-t?)

Chad: Ron (Bokkos) bút 'Fulbe hut', Sura bit, Ron (Kulere) ʾabùt 'hut', Zeghwana bàtiwe 'hut'

SINO-CAUCASIAN LANGUAGES

NOTES ON THE SINO-CAUCASIAN AFFINITY OF SUMERIAN
(PRELIMINARY REPORT)

John Bengtson

As is well-known, the Sumerian language has been compared with a wide variety of other languages in the attempt to find linguistic kinship, and to this day there is no agreement on the classification of Sumerian.

In recent months, the author has been investigating the possibility of including the Sumerian language with the Sino-Caucasian (=Dene-Caucasian) macrophylum, as suggested by Vitaly Shevoroshkin. As discussed further below, I now consider the Sino-Caucasian affiliation the most promising possibility. This hypothesis is supported by isoglosses in basic vocabulary, of which the following list is suggestive, but not exhaustive:

(1) Sum *me* ~ e-*me* 'tongue': Bsq *mihi*, NC **mēlc'c'ï*, ST **mlaj* 'tongue'; Bur *-melč* 'jaw' (NSC 1, SC 61)
(2) Sum *igi* ~ *ibi* 'eye': Bsq *be-gi*, NC **ʔwilhi*, Bur *-l-*, *iil-*, Yen **de-* 'eye'; ST (Tib *l-ta*), ND ***ʔiil-* 'to see' (NSC 3, SC 16, RS 14.1)
(3) Sum *sú* ~ *zu* 'tooth': NC **cɨlɬV* 'tooth'; ST (Tib *-c^{h}ul-* 'mouth'; cf. Sbalti *co*, Manchati *c^{h}oa* 'tooth') (NSC 19, NC 1, IST 135)
(4) Sum *ka* 'mouth, face': Bur *-xʌ-*t, ST **ka*, ND **-qa* 'mouth' (NSC 20, P 79)
(5) Sum *dub*-bin 'finger': NC **t'up'V*, Yen **təp-* 'finger'; ST (Tib *t^{h}eb* 'thumb'; cf. Tib *-ʒub-* 'finger', Bur *cUp* 'finger's breadth' (NSC 24, SC 1.15)
(6) Sum *su* ~ u-*zu* 'flesh, body': Bsq *soin* 'upper body', NC **čɨnHV* 'game, animal', ST (OChin **śjĕn* 'body', ND (Ath **-cən?* 'flesh') (NSC 43, STC 181, P 175)
(7) Sum *mud* 'blood': Bur *mUlt-* id. (NSC 46)
(8) Sum *úš* 'blood, love, etc.': Bsq bi-*hotz* 'heart, love, etc' Bur *-ʌs* 'heart, mind' (NSC 48)
(9) Sum *bir* 'kidney': Yen **bajbVl* 'kidney'; cf. Bsq *barrabil* 'testicle' (NSC 50, Yen p. 171)
(10) Sum *peš* ~ li-*biš* 'heart, bowel, womb': Bsq (h)*ertze* ~ (h)*erxe*, NC *He-*werḳ'V* ~ *-perḳ'V*, ST **Pik*, Yen **pɨʔil* 'bowel, gut' (NSC 54, SC 1.9)
(11) Sum *i-zi* 'fire': Bsq *su*, NC **c'aji* 'fire'; ST **c^{h}a* 'hot'; ND (Haida *č'aaʔ-* 'fire, etc') (NSC 65, T305, BNC 85)
(12) Sum *ug* 'sun, day': Bsq *igu-* ~ *egu-* 'sun, day', NC **ʔ^{w}ɨGGɨ* -nV 'day', Yen **xiGa* 'sun', **xi(ʔ)G* 'day', ND (? Tlingit *Xaga*-n ~ *aga*-n 'sun') (NSC 68)
(13) Sum u-*sar* 'new moon': Bsq i-*zarr*, NC *Ha-*ʒʒ^{w}arîi* 'star'; Bur lʌ-*č^{h}aar* 'morning star'; ST (TB) **ćar* 'sun' (NSC 73, BNC 84, T 337)
(14) Sum *ma* ~ *ma*-da 'land': NC **mel-ʑ́ʑ́*V, ST (TB) **mləy* 'earth'; Bur *mal* 'field' (NSC 75)
(15) Sum *zá* ~*zé* 'stone': Yen **cɨʔ*-s, ND (Ath) **ce* 'stone'; Bur *č^{h}ɨ*-s 'mountain' (NSC 80, P 180)
(16) Sum *tú* 'to pour out': NC (Abkhaz *t^{w}a-* 'to pour'; Bsq i-*thoi*, Bur *thii-š* 'a drop'; Bsq *thu*, Bur *thuu-* 'to spit', NC **tujV* 'to spit, spittle, etc.' (NSC 82, T 316, RS 6.1)
(17) Sum *ur* 'dog': Bsq *hor*, NC (NakhDag) **xwar*, ND (Haida *Xaa*) 'dog' (NSC 87, T 168, BNC 72a)
(18) Sum *az* 'bear': Bsq *hartz*, ND **Xwac-* 'bear'; Yen **Xas* 'badger'; NC (Dag) **XI^{w}Vrć V* 'marten, squirrel' (NSC 90)
(19) Sum *sig$_9$* 'to fill': Bur *šek* ~ *šək* 'full, filled up' (NSC 111)

(20) Sum *zag* 'might, strength': NC **c'aq'q'V* 'strength', Bsq *zakh*-arr 'strong', ST **chăk* 'firm, hard', Yen **sak*-ar 'hard, stiff' (NSC 113, SC 11.14)
(21) Sum *ten* 'cold': Bur *t^{h}atine* 'cold'; ND **tin*-q- 'ice, to freeze' (NSC 120, P 264)
(22) Sum *sig$_{7}$* 'yellow, green': Bur *šIk-ərk* 'yellow', *šIq-*ʌm 'green, blue', NC **ććakk^{w}V* 'yellow, white'; ST **čăk* 'red, gold'; ND **cuX*- 'yellow' ('green, blue' in some languages) (SC p. 25, P 249)
(23) Sum *ur* 'person': Bsq *arr* 'male', Hatti *wur*, Hurrian *ewri-*, Bur *hiir*, NC **Hir*-k'^{w}V 'man' (NC 7)
(24) Sum *geme ~ gem ~ gen* 'maiden, woman': Bur *qUma* 'concubine'; NC (Dag) **q^{h}VmV*, Yen **qVm*- 'woman' (Yen 24)
(25) Sum *zi* 'name': Bsq i-*zen*, NC **ʒʒ^{w}er?ɨ* ST (Tib m-*can*), ND (Tanana -o-*zad*, etc.) 'name' (BNC 59, P204)
(26) Sum a-*na* 'what', *na*-me 'who, which': Bsq *no*, Yen **?an* 'who'; NC **nV* (interrogative), **ni* 'which'; Bur (Wer-chickwar) a-*na* 'where'; ST (Tib *na* 'when', OChin **naj* 'how, what' (T p. 87, SC 9.3, VS 24)
(27) Sum a-*ba* 'who': Bur *be*, (Werchikwar) *bo* 'what', *be*-se 'why'
(28) Sum *za ~ za*-e 'thou': Bsq *zu* 'you (pl)', NC **ź^{w}V*- id.
(29) Sum *ma ~ ma*-e 'I', *-mu, -ma* 'my', *me-, -me* 'we, our': Bur (occasional) *mi*, 'my', *mi, mi-* 'we, us, our'; Yen **b*- (first person, in possessive 'my' and element in verbs) (Yen 16, VS 62)
(30) Sum *-ta* (locative, comitative), *-da* (ablative): Bsq *-ta*- (locative), NC **-tV* (locative, lative), Bur *-ʌte ~ -ete* 'on', ND **-ta* (comitative) (T p. 73, NC 60)

Phonetic Developments. A hypothesis of genetic relations is based primarily upon lexical and grammatical correspondences—and only secondarily are phonetic correspondences extracted from the corpus of resemblances. The seasoned comparativist will mote several cases of regular correspondence in the etymologies above, as well as some cases that appear anomalous. Some tentative notes and explanations will be given here:

(1), (2), (3), (7), (14): It would appear that SC intervocalic/final ***-l-*, *-l* are lost in Sumerian or, at least, not shown in the cuneiform notation.

(3), (6): The apparent alternation of *s ~ z* may originally have been conditioned by the presence or absence of prefixes or the presence of different prefixes. Note the analogous alternation in (10) *peš ~* li-*bĭš*. Similar alternations have been noted in Basque (in-*ar ~* i-*har ~* txin-*gar* 'hot coal'), Burushaski (*buur* 'hair' ~ -l-*puur* 'eyelash'), Sino-Tibetan (cf. Tib b-*kaŋ ~* d-*gaŋ*, *k^{h}oŋ*, different forms of the verb 'to fill', STC p. 124, IST 36), and Na-Dene (cf. Tlingit *-taq* 'inland' ~ *dAq*, without prefix P 269).

(6, 25): These cases may indicate the development of SC ***-N* and ***-NH-*, first to nasalization of the preceding vowel, then to the simple vowel in Sumerian notation:

***cunH-*	>	***cūū-*	>	Sum *su* ~ *-zu* 'flesh, body';
***Sin-*	>	***Sīī-*	>	Sum *zi* 'name';
***SaNH-*	>	***Sāā-*	>	Sum *sa* 'sinew' (cf. Bsq *zain*, NC **sēmhIV*, TB, **-sa*, NSC 55)

(10): Sumerian *š* here corresponds to the palatal consonants in Basque and NC. This 'satem-like' palatilization is characteristic of western Sino-Caucasian (NSC 28, 54, 71).

(3), (6), (12): Sumerian *u* corresponds to NC **i*.

(1), (6), (10), (11), (13): Sumerian *e*-me, u-*zu*, *li*-biš, *i*-zi, and *u*-sar exhibit the class prefixes—or remnants thereof—that are well-known in Sino-Caucasian languages, for example:

Basque: *e*-gurr 'firewood', *o*-dol 'blood', *li*-stu 'spittle', *i*-thoi 'drop', *bi*-hotz 'heart', etc.
North Caucasian: **He*-berc'i 'wolf', **Hi*-mic'c'V 'end'. **Ha*-ʒʒ^{w}arʕi 'star', **He*-c^{w}emV 'eyebrow', **H^{w}i*-rinƙƙi 'night', **h^{w}i*-miʒʒu 'honey', etc.
Burushaski: *-ʌ*-kin 'liver', *-ʌ*-miš 'finger', *-ʌ*-qʌt 'armpit', *lʌ*-č^{h}aar 'morning star', *-n*-dil 'breast', *i*-ric 'kidney', *-ʌ*-si 'star', etc.
Sino-Tibetan: Kachin *ə*-myi 'eye', Nung *ə*-na 'ear', Burmese *ă*-sa 'flesh', Mikir *a*-ri 'hand', Lhota Naga *e*-ŋu 'neck', Kachin *lə*-sa 'sinew', Hruso *li*-coŋ 'star', TB **m*-sin 'liver', **m*-kal 'kidney', Dimasa *bu*-gur 'skin', etc.
Na-Dene: Kutchin *e*-dí 'horn', *e*-ʒey 'ear', *e*-giin 'arm', *o*-ʑi 'name', *a*-t'an 'leaf', *a*-ɤwo 'egg', *i*-ča 'tongue', *i*-či 'head', *-ən*-ci ~ 'nose', *-n*-le 'hand'; Tlingit *lI*-cin 'strong', *lA*-cin 'strength', etc.
(I have not found corresponding prefixes in Yeniseian.)

Abbreviations of languages:
Ath Athapaskan; **Bsq** Basque; **Bur** Burushaski, **Dag** (proto-)Dagestan; **NC** (proto-)North Caucasian; **ND** (proto-)Na-Dene; **OChin** Old Chinese (Ancient Chinese, Archaic Chinese); **ST** (proto-)Sino-Tibetan; **Sum** Sumerian; **TB** (proto-)Tibeto-Burman; **Tib** (Classical) Tibetan (=Old Bodish); **Yen** (proto-)Yeniseian

Abbreviations of references:
BNC Basque-North Caucasian (Chirikba, 1985)
IST Introduction to Sino-Tibetan (Shafer, 1974)
NC North Caucasian (Roots) (Nickolaev & Starostin, 1987)
ND Na-Dene (Sapir, 1915)
NSC Notes on Sino-Caucasian (Bengtson, 1989)
P (Pinnow, 1966)
RS (Shafer, 1952)
SC Sino-Caucasian (Starostin, 1984)
STC Sino-Tibetan Conspectus (Benedict, 1972)
T (Trombetti, 1926)
VS (Shevoroshkin, 1989)
Yen (Starostin, 1982)

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ETRUSCAN AS AN EAST CAUCASIAN LANGUAGE

Vladimir Orel and Sergei Starostin

Proto-East-Caucasian (=PEC) was recently reconstructed by S. Nikolaev and one of the authors of the present paper (cf. Starostin 1985; Diakonoff and Starostin 1986; and a comparative dictionary containing a large stock of roots now being prepared for publication). Together with the Abkhazo-Adygian family (PAbAd), the East Caucasian family belongs to a larger North Caucasian (PNC) phylum and it includes the following branches: (1) Darghi-Lezghian, (2) Laki, (3) Awaro-Ando-Cezian and (4) Nakh. The fifth branch of EC, as shown by Diakonoff and Starostin (1986), consists of Hurrian and Urartian. This hypothesis, discussed earlier by Diakonoff (1971, p. 157f.), is supported by more than 150 Hurri-Urartian etymologies and a fundamental set of regular phonetic correspondences between Hurri-Urartian and other branches of EC. An adequate description of the PEC phonological system can be found in Diakonoff and Starostin (1986, p. 6ff). Another ancient member of the PNC phylum probably belonging to the Abkhazo-Adygian (=AbAd) family is Hatti (see Ivanov 1985).

We shall attempt to show here that Etruscan, a language of unidentified genetic affiliation, constitutes yet another branch of EC. As proof of our hypothesis we offer a fairly considerable number of Etruscan etymologies discussed below and a comparison of Etruscan words with PEC roots. It is worth mentioning that our analysis is limited to Etruscan data belonging to the "list of those words whose meaning is known with certainty or near-certainty" (Pallottino 1956, p. 275f.). The list in question was compiled by Pallottino (1956, repeatedly re-edited). In the present paper it is supplemented by a number of items taken from d'Aversa (1979) and Pfiffig (1969). The etymological section of the present paper also includes a few Latin words of Etruscan origin.

The list of etymologies, covering about 60 Etruscan words (i.e. about half of the words with a more or less definite meaning), is followed by a comparative outline of the regular phonetic correspondences between Etruscan and EC languages which corroborates the data analyzed in the etymological section of the paper. What we do not discuss in detail here is the problem of morphological analysis due to the poor and contradictory state of Etruscan grammatical description.

As far as EC data are concerned, we cite PEC reconstructions by referring readers to the etymological dictionary (soon to appear in print) for further information. Hurri-Urartian parallels, however, are usually adduced.

I. Etymologies

1. Etr. al- 'to give' - PEC *ʾi-ẑẑV- id. (cf. Hurr. ar- id., Urart. ar- id.).

2. Etr. avil- 'year' - PEC *swĕr(H)o- id. (cf. Hurr. s̄awalə id., Urart. šâlə id.).

3. Etr. ais- 'God' - PEC *ʔams̄V- 'God, sky' (cf. Hurr. êz̄ə 'God', Urart. êšə id.).

4. Etr. am- 'to be' - PEC (PLezgh) *ʾi-ma(n)- id. (cf. Hurr. mann- id., Urart. man- id.)

5. Etr. -c 'and' (used enclitically) - PEC *-ḳV id. A popular comparison of Etr. -c with Lat. -que seems to be much less probable.

6. Etr. camθi 'kind of magistrature' - PEC *kwVnṭV- 'hero, boy, youth'. The first vowel of the PEC word may be *e, *i or *ɨ.

7. Etr. cap- 'vase; cup (?)' (cap-e, cap-i) - PEC *qqʷāp̣ā 'vessel'.

8. Etr. cep- 'priestly title' (cep-ta, cep-en) - PEC *kwip̣ɨ̆- 'prayer'.

9. Etr. cexa 'kind of ritual; sacred act' - PEC *kakwV̆- 'prayer'.

10. Etr. ci 'three' - PNakh *qo id. (cf. Hurr. kig id.).

11. Etr. cl- 'son' (cl-an) - PEC *ẑɨlV- 'boy, youth'.

12. Etr. zal-, es(a)l- 'two' - PNakh *ši id. (cf. Hurr. s̄in- id., Urart. šî-šə id.).

13. Etr. ziva- 'dead (?)' - PEC *s̄iʔwV- 'soul, spirit'. For another semantic development of the same original meaning cf. in Hurr. s̄eɣ-iri 'alive', Urart. šu/oḫ-ori id. Note that while the meaning 'dead' is generally accepted for Etr. ziva-, a few scholars translated the word in question typical of epitaphs as 'alive'.

14. Etr. zic-, zix- 'to write', zix- 'written, book' - PEC *s̄́änq̇q̇ī̆- 'ink' corresponding to PAbAd *šʷəqIa 'book, letter'. Originally a PNC word for a natural dyestuff?

15. Etr. zil-, zil-c, zil-ɤ 'kind of magistrature', 'praetor (?)' - PEC *ĉ̣ĉ̣ɬ(i)wV̄-/*ĉ̣ĉ̣ɬwiɬV̄- 'seed, kin, village' (cf. Urart. zil(i)B- 'seed, descendants').

16. Etr. hec- 'to put' - PEC * ʾV-ḳwV- id. (cf. Hurr. keb-, geb-, hew-, kew-, gew- id.).

17. Etr. hinθ- 'funerary world', hinθ-ial 'soul, shadow' - PEC *qIVntV- 'shadow'. Semantically the Etruscan word bears a striking resemblance to the Hurrian reflection of PEC *qIVntV-: Hurr. kundarə, ḫundarə 'abode of the gods'.

18. Etr. hu-θ-, one of the numerals from 'four' to 'six', probably 'five (?)' - PEC *x̄wä-/*fä- 'five'.

19. Etr. hus-, huś- 'boy, son' - PEC *u̯-ɬšwV- id. (cf. Urart. aršə 'adolescents, boys').

20. Etr. θu- 'one' - PEC *cə id. (cf. Urart. š(V)-usə 'first').

21. Etr. mac, one of the numerals from 'four' to 'six', probably 'four (?)' - PEC *jĕmq̇ɬ- 'four'.

22. Etr. maru- 'kind of magistrature' (› Umbr. maro) - PEC *mārẑ̂V- 'man, male' (cf. Hurr. mari(j)-annə 'charioteer', Urart. marə 'a rather highly placed group of the palace personnel').

23. Etr. meθl-um 'nation, league of tribes (?)' - PEC *melźźV- 'place'.

24. Etr. meɤ, meɤ-l 'people, nation' - PEC *mə̄nɤV- 'people, man'.

25. Etr. muni 'place, repository, loculus', mun-θ 'order, place, world' (› Lat. mundus) - PEC *mäswänV- 'place'.

26. Etr. murs-, murś- 'sarcophagus, urn', murz-ua - PEC *muś̄u-r(a)- 'tomb'.

27. Etr. netśvis, netsviś 'haruspex' - PEC *nɬwcV- 'prince, son-in-law'. Religious connotations are well preserved in PAbAd *nəc̯ʷa 'God'.

28. Etr. ras-na, raś-na 'Etruscan; Etruria', perhaps also 'populus (?)' - PEC *jələ̄V- 'man, husband'.

29. Etr. ri-l 'at the age of . . .' - PEC *rV-ʔē 'season' (cf. Hurr. šin-arBu/o- 'two years old' and the like).

30. Etr. sval- 'to live' - PEC *ć̣äẑ̂wV- 'alive; blood' (cf. Hurr. zurgi 'blood').

31. Etr. tin 'day' - PEC (PNakh) *dē(n) id.

32. Etr. śuti-, śuθi-, suθi- 'abode, tomb' - PEC *ćć̣wildV- 'stone construction'.

33. Etr. ϕersu 'mask' (originally 'mask of a ferocious animal') - PEC *bHercĭ/ĕ- 'beast of prey'.

34. Etr. favi 'underground chamber in a temple' - PEC *fiwV- 'tomb (the second vowel in PEC may be *i, *i̯, *e or *o).

35. Etr. fanu 'worship site' (originally on a hill?) - PEC *f̄ana/e- 'hill' (cf. Hurr. fâvanə id., Urart. vâvânə id.).

36. Etr. elu-, ilu- 'to pray' - PEC *ʾi-ĉV- id. (cf. Hurr. el(a)-m- 'oath' < PEC *(ʾi)ĉ-inV-).

37. Etr. *sant- > Lat. sant-erna - PEC *ᵛ̆canda- 'kind of metal'.

38. Etr. *vel- > Lat. veles 'warrior' - PEC *ʔIwᵛ̆r?i/e- id. (cf. Hurr. ẖur-adə id., Urart. ẖur-adə id.).

39. Etr. *pop(l)- > Lat. poples 'knee-cap' - PEC *pi̯mpV- 'knee'.

40. Etr. aθre 'building or its part', 'atrium' (> Lat. atrium) - PEC *HazzarV- 'fence'.

41. Etr. matu 'wine' - PEC *mHädwV- 'spirits'.

42. Etr. ati 'mother' - PEC *ada(j)- id.

43. Etr. sec, sex 'daughter' - PEC *CVk̦wā- 'female'.

44. Etr. sr-en 'picture, figure' - PEC *ç̣arV- 'line, scratch'.

45. Etr. esera 'moon (?)' - PEC *śᵛ̆lHV- 'moonlight, light' (cf. Urart. šêl-ard 'moon, the Moon-goddess').

46. Etr. *tin- > Lat. tinea 'moth' - PEC *t̤ihnā/ə - 'nit' (the root vowel may be also reconstructed as *a).

47. Etr. ac- 'to have, to do (?)' - PEC *ʔăGGV- 'to hold, to take'.

48. Etr. lei- 'to die' - PEC *ʔi(w)ĉV- id.

49. Etr. θa- 'woman, wife (?)' - PEC *zzwᵛ̆jV-/*ç̣cwᵛ̆jV- 'female'.

50. Etr. cver- 'boy (?)' - PEC *k̦wăr-nV- 'the young (of animals)'.

51. Etr. cisu 'part (?)' - PEC *q̈ăc̤i̯/u- 'piece'.

52. Etr. *hal- 'to drink', hal-x 'beverage (?)' - PEC *ʾV$\hat{z}\hat{z}$-(w)V- 'to drink'.

53. Etr. lar-an 'war-god' (? < *ral-an-) - PEC *rĕrRV- 'war' (the final PEC vowel is *i, *i̯ or *o).

54. Etr. θui 'now (?)' - PEC *ẓwĕ id.

55. Etr. nuz- 'small animal (?)' - PEC *năwᵛ̆ši- 'sheep'.

56. Etr. θra- 'milk, mother, bosom(?)' - PEC *ʔəzzər- 'colostrum'.

57. Etr. maθ- 'honey (?)' (connection with #41 is questionable) - PEC *hĭ-mĭẓẓū- id.

58. Etr. lec- 'high (?)' - PEC *ʔə̆-ləqV- 'to be high'.

59. Etr. *cul- > Lat. culīna 'fat' - PEC *XwɬlH- id.

II. Comparative phonetics

The above etymologies reveal a set of regular phonetic correspondences between the Etruscan and PEC consonantal and vocalic systems (numbers in parentheses refer to Part I).

Consonants

Labials

PEC *p, *p̣, *b	Etr.	p/ɸ	(7, 8, 33, 39)
*f, *f̄		f	(34, 35)
*m(H)		m	(4, 21-26, 41, 57)
*w, *Hw		v	(2, 13, 19, 25, 27, 30, 34, 35)

Dentals

PEC *t, *ṭ, *d	Etr.	t/θ	(6, 17, 31, 32, 37, 41, 42, 47)
*n(H)		n	(25, 27, 31, 35, 47, 56)
*r		r	(22, 26, 29, 33, 40, 45, 50, 53, 56)
*rH		l	(2, 38, 53)
*j		ø	(see below)

Dental affricates and fricatives

PEC *c, *ʒ(ʒ), *ʒ́(ʒ́), *ǯ(ǯ)	Etr.	θ	(20, 23, 27, 40, 49, 54, 56, 57)
*č, *c̣, *ć		s	(30, 32, 33, 37, 43, 44, 51)
*s		ø	(2, 25)
*s̄, *ś, *š, *s̄̌		(-) z- -s-/-ś-	(3, 12-14, 19, 26, 28, 45, 55)

Laterals

PEC *ʒ(ʒ), *ĉ(ĉ)	Etr.	c-//z-	(11,15)
		-l-	(1, 30, 36, 48, 52)
*-rʒ-		-r-	(22)
*l, *ɬ		l	(11, 15, 23, 28, 58, 59)
*lH		r	(45)

Note: Laterals change into c- before back vowels and z- before front vowels as in Hurri-Urartian where lateral affricates are reflected as g-, k- before back vowels and as z-, š- before front vowels (cf. Diakonoff and Starostin 1986, p. 47ff).

Velars

PEC *k(w), *ḳ(w), *g(w), *q̇(w), *q(w), *GG, *Xw	Etr.	c/x	(5-10, 14, 16, 21, 43, 47, 50, 51, 58, 59)
*x(w)		h-, -x-	(18, 24)
*qI		h- (?)	(17)

Laryngeals

PEC *ʔ, *ʔ, *H	Etr.	Ø/h	(1, 3, 4, 16, 36, 40, 47, 48, 56-58)

Vowels

The following correspondences have been established for vowels in nouns.

PEC *a	Etr.	a	(3, 7, 22, 35, 37, 40, 42)
		e/i after velars	(9, 50, 51)
PEC *ä, *i	Etr.	e/i	(8, 13-15, 46)
		a after labials	(34, 41, 57)
PEC *äw(ä)	Etr.	u	(25, 55)
PEC *e	Etr.	e	(23, 33)
		i after *w	(2, 54)
PEC *ə	Etr.	e	(24, 38)
PEC *i	Etr.	e	(27)
		u/o after labials	(19, 39, 59)
PEC *u	Etr.	u	(26)

Two exceptions to the above system should be noted. #51 shows Etr. i as a reflection of PEC *a while in #32 we find Etr. u instead of a as a reflection of PEC *i after a labial.

A special kind of development is characterisitic of roots displaying a *jVRC- structure in PEC (see below). In Etruscan such roots have a regular a (21, 28).

Consonantal clusters and morphonemics

Despite the limited amount of material in Part I it was still possible to discover an interesting morphonological rule in Etruscan: PEC roots reconstructed as *jVRC- appear in Etruscan as *RaC- (21, 28).

It is also possible to establish a few rules concerning the development of ancient consonantal clusters:

(a) PEC *-NT- › Etr. -nT- (6, 17, 37)
PEC *-NC- › Etr. -C- (3, 14, 24, 39)
(b) PEC *-rC-, *-Cr- › Etr. -rC- (26, 33)

Note: T = dental; C = not dental

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NOSTRATIC / EURASIATIC LANGUAGES

SUMMARY OF NOUN AND VERB INFLECTIONAL CORRESPONDENCES IN PROTO-DRAVIDIAN AND PROTO-URALIAN

Stephen Tyler

[S. Tyler has compared, for many years, Dravidian and Uralic (Uralian) languages. From the point of view of Nostratic, both Dravidian and Uralic represent two closely related East Nostratic languages representing one of two branches, the other branch being Altaic. This means that the reconstruction of a Proto-Dravido-Uralic language is quite justified. As far as the chronology is concerned, both Proto-Altaic and Proto-Dravido-Uralic existed at the same time after having separated from Proto-Nostratic, or, rather, from Proto-East Nostratic – V.S.]

	Proto-Dravido-Uralian	Proto-Dravidian	Proto-Uralian
NOMINATIVE	Ø	Ø	Ø
GENITIVE/OBLIQUE	*nV/*tV	*-nV/*-tV	*-n/*ta,-tä
ACCUSATIVE	*-m	*-n/-*m	*-m
LOCATIVE	*-ne/*-te	*-ne/*-te	*-na,-nä/ *-tta, -ttä
DATIVE/LATIVE	*-KV	*-KkV/*-kV	*KV
PRESENT/HORTATIVE	*-K	*-K	*-K
PAST	*-i,*-t,*-c	*-i,*-t,*-c	*-i,*-ś,*-ć

1. Numerals consist of base with or without pronominal endings, as in

Cheremis:

ik	ikte	1
kok	koktat	2
kum	kumat	3
nal	nalat	4

Telugu

oka	okati	1
ira-	reṇḍu	2
mū-	mūḍu	3
nala-	nālugu	4

2. Bases may be either the simplex or compounds of two numerals. The first seven numerals are simplex

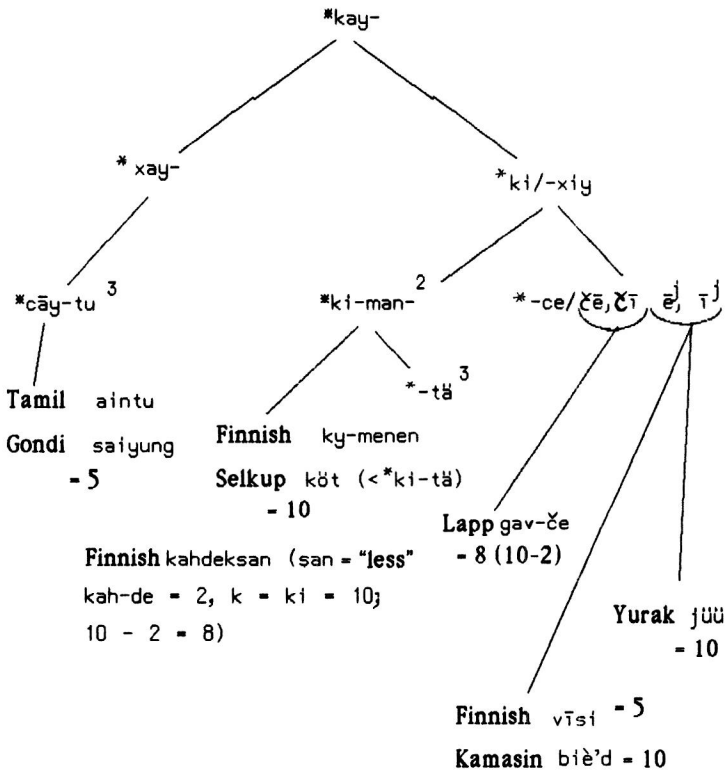
Finnish	kahdeksan	8	(kak-ta = 2 + k(i) = 10)
Tula	eṇma	8	(eṇ- "two" + ma = 10)

3. Pronominal endings in Dravidian indicate human, non-human, male, female, and humanific.

Tamil	eṭṭu	8 things
	eṇvar	8 persons
Parji	cēvir	5 men
	cēyal	5 women
	cẽnduk	5 things

4. For Dravido-Uralian we can reconstruct the pronominal ending *-tu as the third person m/f/n suffix. Its reflexes in Uralian are -tä, -ta, t, -si, -ci, -s. In Dravidian they are -tu, -ti, -di, -ṉru.

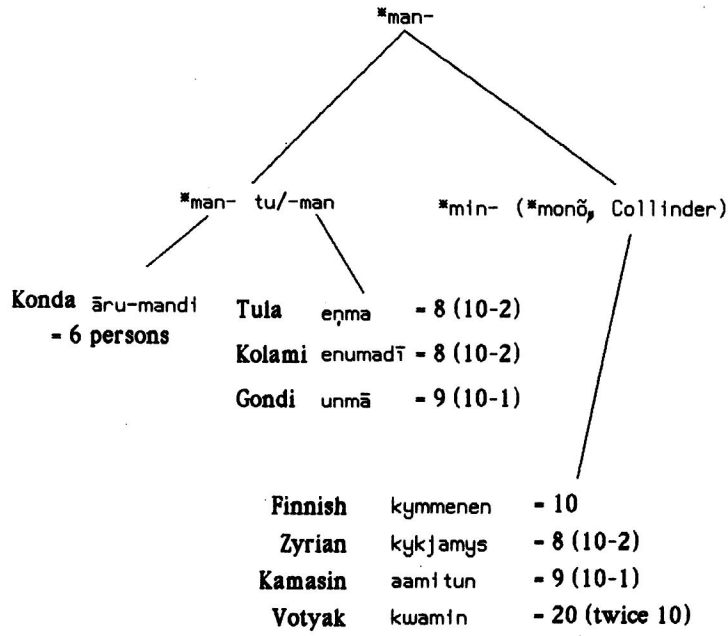
A. *kay- = "hand," "five," "ten



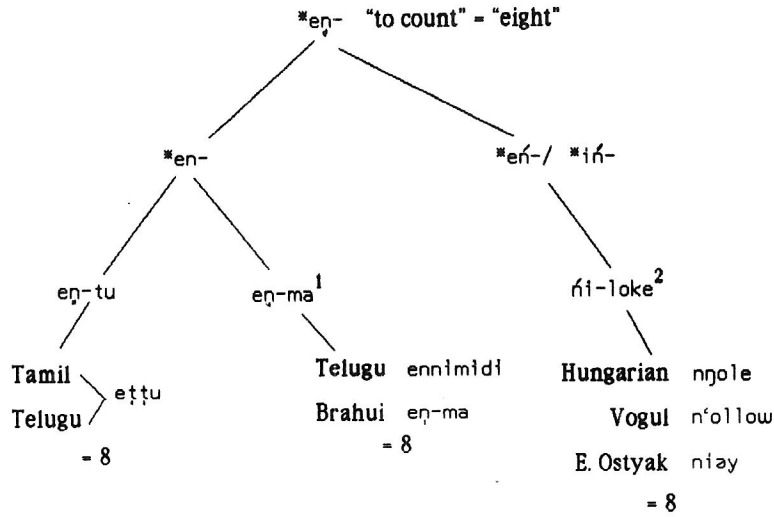
Notes:

1. The "ten" forms are based on "five" and mean something like "five-many" or "five-full"
2. man- < *man- "herd," "flock," "many"
3. -tu < *tV where -V is -ü allophone of *u; *-tä/*-tü < *Du/-tu
4. v- < b-

B. *man- = "ten," "herd," "flock," "many"



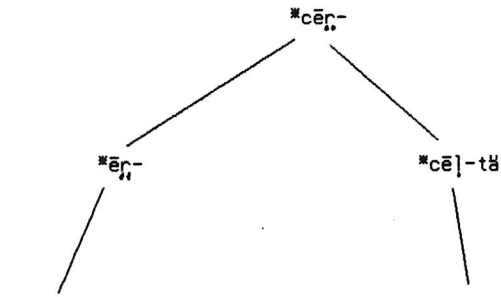
C. *eṇ- "eight"



Notes:

1. -ma < *ma(n) = "ten," "flock," etc. and human numerical classifier. eṇ-ma = 10 - 2.
2. -loke < IE legein, logos "to count" = "ten." ni-loke = 10 - 2. Cf. Lapp loge = 10, Vogul low = 10.

D. *cēn̥- = "seven"

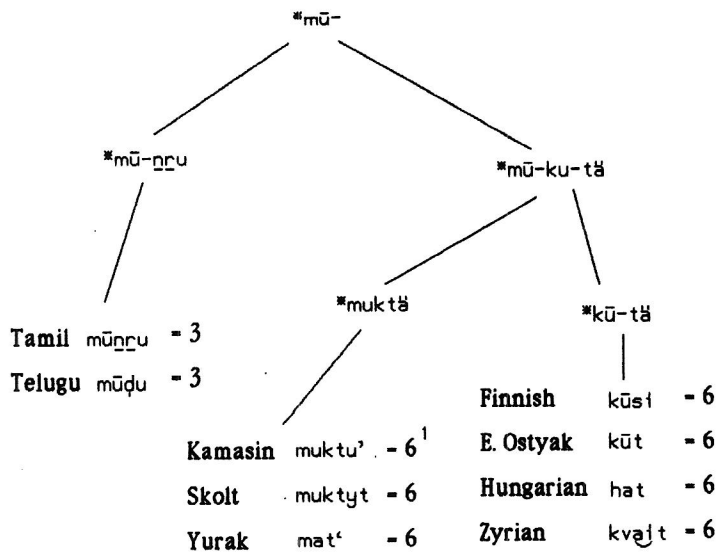


Tamil	*ēn̥u = 7	**Hungarian**	hēt[1] = 7
Telugu	*ēḍu = 7 (ḍebbadi = 70)	**Lapp**	ciejâ[2] = 7
Tulu	*eḻu = 7	**Selkup**	seel'čʏ = 7
		Finnish	seitse[3] = 7
		Kamasin	sej'bü[4] = 7
		Yurak	si'iw[4] = 7
		Ostyak	lāpət[5] = 7
		Ose.	läwət[5] = 7
		Zyrian	sizim = 7

Notes

1. -l̥ + tä > t, or from IE *sap-ta
2. -l̥ + tä > jâ
3. -l̥ + se (< -tä) > tse
4. From IE *sap-ta or -bü and -wgo with -pət/-wət forms in Ostyak below.
5. *cēl̥- > ēl̥- > lā-/lä-

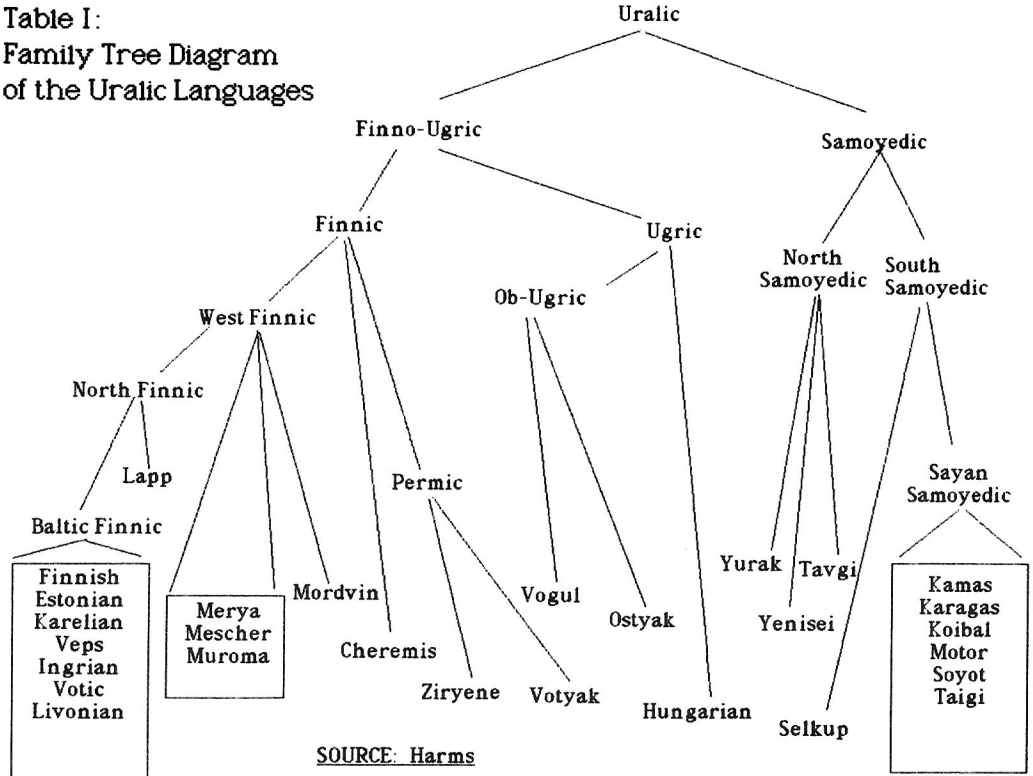
E. *mū- = "three," "six"



Notes:

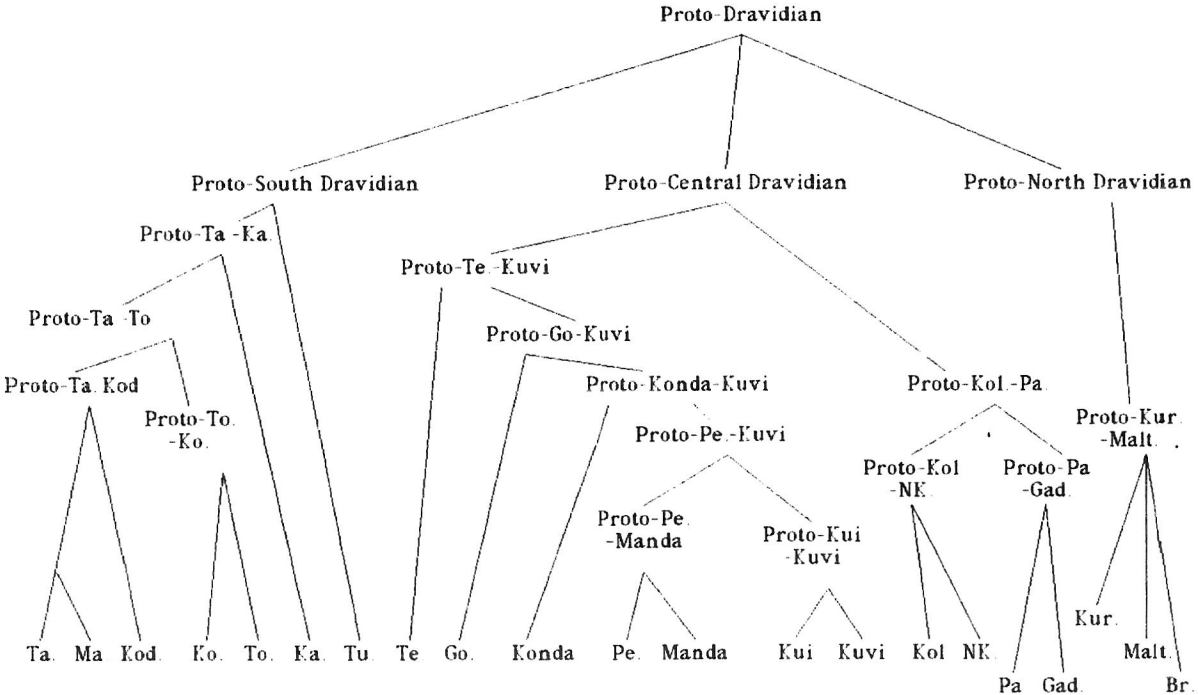
1. Possibly "twice three" where -ku- would be the dual suffix? Cf. Yurak sidnt'et = 8 < sid'a = 2 and t'et = 4. Cf. also Yurak n'axarh = 3, Selkup nääkyr = 3, Kamasin naagur = 3, all from naa + kar. The fixed element -kar is cognate with Finish kolme, Hungarian három, harma, Vogul xuram, etc.

Table I:
Family Tree Diagram
of the Uralic Languages



SOURCE: Harms

Table II:
Family Tree Diagram
of the Dravidian Languages



SOURCE Subrahmanyam

THE PREHISTORY OF THE INDO-EUROPEAN VOWEL SYSTEM IN COMPARATIVE AND TYPOLOGICAL PERSPECTIVE

Joseph Greenberg

In Greenberg (1987:332), a work concerned with the classification of the indigenous languages of the Americas, it was proposed regarding the third and least extensive of the three families posited, namely Eskimo-Aleut, that its affiliations are in Northern Asia and Europe.[1] The large group of languages defined was called Eurasiatic and was hypothesized as having the following membership: 1. Indo-European; 2. Uralic; 3. Yukaghir; 4. Altaic (Turkic; Mongolian and Tungusic); 5. Ainu: 6. Korean; 7. Japanese; 8. Nivkh; 9. Chukotian; 10. Eskimo-Aleut. Of these Uralic and Yukaghir form a separate subgroup as do Ainu, Korean and Japanese.

By comparative perspective in the title of this paper, is intended the application of the comparative-historical method to this Eurasiatic group; in the present context to a single cluster of problems. Such comparisons will lead in certain instances to reassessment of phonological and grammatical characteristics of Proto-Indo-European as it is presently conceived. Just so when Hittite and the other Anatolian languages and Tokharian were discovered it led to changes in certain of our ideas concerning Indo-European, ideas which had received on most points, a broadly based consensus of Indo-Europeanists. In other instances it will

be confirmatory and in still others will help us to choose among competing theories. Most interestingly, as I believe holds true in the present instance, it may lead us to reassess our views and direct attention to relatively neglected and apparently marginal phenomena of Indo-European which will become more comprehensible in the light of the additional comparative evidence. Ideally we hope that internal evidence within a group of languages and external data will produce converging results. In the present instance, in which we will be concerned with the vowel system of Proto-Indo-European and especially with the system of qualitative apophony, I believe that a consideration of external evidence leads us to reevaluate internal facts of Indo-European and helps us to make them more understandable historically.

In assigning Indo-European to the Eurasiatic family, it is by no means denied that Indo-European has more remote connections also. This is indicated by the very title of Greenberg (in preparation) "Indo-European and its closest relatives: The Eurasiatic family". The relationship of the present proposal to others that have been made by various scholars, and particularly that of the influential Soviet Nostraticist school will be briefly indicated later. A more extended discussion is reserved for the work in preparation.

Although the definition of Eurasiatic as described above is in its totality new, it should not be wholly surprising. There

have been numerous, mostly pairwise comparisons among members of the family. As I have pointed out a number of times beginning with my earliest work on African classification (Greenberg 1949-50), we should not be concerned with isolated hypotheses of relationship, but with a historical taxonomy of languages, which distinguishes valid groups at various levels. This concept is analogous to that of the taxon in biology.[2] Thus the Germanic languages, or the Indo-European languages are, to our present knowledge, valid genetic groups or taxa while one consisting of French, Albanian and Swedish is not, although all of the languages are related since they are Indo-European.

This means that however important and well-studied a group is, it is the wrong method to just seek for some other group, to which one has noted resemblances and then seek to "prove their relationship " by proceeding immediately to reconstruction. Most well recognized linguistic stocks have more than two branches and from the beginning of Indo-European studies in the nineteenth century, Indo-Europeanists have found that it was most fruitful to study all of the recognized branches in a kind of overall and, as it were, simultaneous comparison.

In the instance of Indo-European truly enormous efforts have been expended since the time of Møller to prove a connection with Semitic. It is by now clear that Semitic and Indo-European, although ultimately related, do not form a natural unit or taxon in the sense described above. As a result of general recognition

of this fact, more recent efforts have been directed to connect Indo-European with the broader Afroasiatic stock, the group of which Semitic is a single branch.

On the other hand, within what is defined here as Eurasiatic, most discussion has centered on the connection between Indo-European and Uralic, largely because of the size of Uralic, its geographical proximity to Indo-European, and the existence of a considerable body of specialists who have produced an important body of comparative work. I believe, along with others, that there is a prima facie case for the closer connection of Indo-European to Uralic than to Afroasiatic. If this is a valid conclusion, the question immediately arises, as indicated in the foregoing theoretical discussion, as to what other languages, if any besides Uralic, share a common ancestor with Indo-European and form with it a valid genetic unit, only more distantly connected with Afroasiatic and possibly other stocks.

A number of prominent linguists have pointed to Uralic as being especially close to Indo-European. Among these, special attention is directed here to consideration of the views of Holger Pedersen, who coined the term Nostratic. No one scholar, however prominent, can be endowed with authority on such matters. Nevertheless, since Pedersen, an eminent Indo-Europeanist in his own right, was more occupied with the question of the external relationships of Indo-European, than any other scholar in this

field, many of whom dogmatically excluded discussion of this question, his views are worthy of careful consideration.

I will discuss briefly the four publications of Pedersen of which I am aware, in which he discussed this question. I believe that it will appear that my basic hypothesis is perhaps closer to his views than that of the body of scholars who now call themselves Nostraticists.

The term Nostratic was introduced in Pedersen (1903) in an article which had to do with the sound laws of Turkish. In regard to certain resemblances of Turkic to Indo-European he says that to explain them the possibility of relationship must be taken into consideration. Many linguistic stocks in Asia, he believes, are doubtless related to Indo-European. In this connection he mentions Ural-Altaic which was at that time generally considered to be a unitary family. He then introduces the term Nostratic for all the languages related to Indo-European. He does not enumerate them but adds that Hamito-Semitic should also be included. In 1924 in a book written in Danish and translated in 1931 into English, the emphasis is on the connection of Indo-European with Finno-Ugric. He states that the relationship is closer than between Indo-European and Semitic. "Moreover, the inflectional systems show greater relationship than in the case of Semitic" (1931:337.) Although there are few lexical items in common "to deny relationship between the families would be overbold." Moreover:

"If we accept relationship, we are led yet further afield, not only to Samoyed which cannot be separated from Finno-Ugrian, but throughout all of Northern Asia and across the Bering Strait, because similar, though fainter, resemblances like those here cited are found also in Turkish, Mongolian and Manchu, in Yukaghir, and even in Eskimo."

He then goes on to mention Hamito-Semitic "and possibly Basque."

Once more in 1933 (p.309), he emphasized the connection of Indo-European with Finno-Ugric (Uralic). "There is here a sum total of agreements which excludes chance." In again asserting the closer connection of Indo-European to Uralic he makes the following statement which is of great interest in regard to the topic of the present study.

"Probably Finno-Ugric is to be compared to Indo-European in its post-Ablaut stages, while it should be compared to Semitic in its pre-Ablaut stage. From this it would follow that the separation of Indo-European and Semitic was at a more ancient period than that between Indo-European and Finno-Ugric." (ibid. 308)

Unfortunately he does not specify any details here e.g. whether he is referring to qualitative Ablaut, quantitative Ablaut or both.

Finally (1935:330) he once more states his conviction that "a much closer relationship than between Semitic and Indo-European exists between Indo-European and Uralic." With regard to the latter relationship in the area of grammatical elements you will "hardly find such a thorough agreement a second time." He once more mentions the possibility of agreement between the Indo-European Ablaut system and that of Uralic. Here

he is somewhat more specific than previously in that he refers without doubt to qualitative Ablaut. Moreover the front-back harmony of Uralic is an innovation. However, there are numerous other cases of vowel alternation for which an internal Uralic explanation has not been found and as long as this is so "one should not exclude the possibility of finding traces of Ablaut which are shared with Indo-European (p. 332)."

I believe it not unfair to conclude from these statements of Pedersen's that he viewed Indo-European as especially close to Uralic (Finno-Ugric in earlier statements) and that the closer relationships of Indo-European in general are to be sought in eastern Asia (Altaic, Yukaghir and even Eskimo).

Other linguists besides Pedersen have pointed to a specially close relationship of Indo-European to Uralic. So Anttila (1972:320) in his well-known textbook of historical linguistics after mentioning Indo-Semitic, Indo-Uralic and Ural-Altaic states "The Indo-Uralic hypothesis is particularly strong because the agreement is good in pronouns and verbal elements as well as in basic vocabulary" (1972:320). Most recently Cowgill (1986:13) expressed his belief that of the language families with which Indo-European has been compared Uralic seems to present the most credible case. He notes that basic correspondences exist in pronominal bases, endings and lexical items.

Illich-Svitych himself in a paper which appeared only three years before the first volume of the comparative Nostratic

dictionary in an article regarding early Indo-European contacts with Semitic (1964:3) states that in Møller's comparative Indo-European and Semitic dictionary along with many fantastic etymologies are a small number of quite probable ones but that it belongs to the part of the lexicon least likely to indicate genetic connections. He concludes (op.cit.:9) that since some of these are found in other branches of Afroasiatic than Semitic, Indo-European cannot be the source and that the resemblances are the result of borrowing from Semitic into Indo-European.

He evidently abandoned the point of view that all the resemblances were due to borrowing and I share his later conviction that Indo-European and Afroasiatic are related, but his earlier conclusions strengthen the view presented here that the Indo-European connection with Afroasiatic is more remote than certain other ones including that with Uralic.

One question raised by Cowgill (op.cit.) deserves further treatment at this point. While asserting that among the hypotheses concerning Indo-European that he is considering, the one linking it to Uralic is the best, he believes that the relationship is very remote particularly because of absence of cognates in the numeral systems. Because of the stability of numerals in Indo-European, one by no means found in numerous other well-recognized families, it has taken on an undue degree of significance. At the cultural level of Proto-Eurasiatic one will not expect numerals above perhaps four or five to be stable.

However, once we consider Eurasiatic languages outside of Uralic which, on my view, does not have a special relationship to Indo-European the picture becomes quite different. There is important evidence regarding 'one' and 'two' and perhaps also 'three' including the following.

Ainu has sem 'as, like, the same.' This root occurs with similar meanings in Indo-European (Pokorny 1959: 902) but alongside of the meaning 'same' is that of the cardinal number 'one' as in Greek, Armenian and Tokharian. In Korean we find oj 'only' which we may compare with the most widespread Indo-European root for 'one' namely oi- with various suffixes (Pokorny 1959:286). The meaning in Korean is identical with that of Greek oĩ-(os), Cypriot oi-w-(os) and Avestan aeva 'one, only, alone'. Both Ainu and Korean have tu 'two' which is of course identical with the stem of the common Indo-European word for 'two' (Pokorny 1959:228) except for initial t in languages which have no d. Perhaps also Tungusic *ǰu-r (in which r is a plural marker), Oroch ǰu, Orok du, Manchu ǰuwe belong here.(Tsintsius 1975:276-7)

Aleut has ala-k for 'other, two' (-k is the dual ending cf. Uralic); Siberian Yuit Eskimo alak 'second,' Alaskan Yuit Eskimo alla 'another'; Ainu ara 'one of two' (Ainu has no l), Chukchi alǝm 'one of a pair, paired thing'; alvaŋ 'otherwise', and Amur Nivkh alv-erq, Sakhalin Nivkh alγaf 'behind, on the other side of'. The first of the Nivkh forms cited is a compound of which the second member is the word erq 'side' and therefore means 'the

other side'. The second contains the very common locative suffix -f.

These forms are, of course, to be compared to PIE *al- 'other' which generally appears with a presumed suffix -i as in Latin ali-us, Greek all-os < *alios. The form without the suffix was later attested for Indo-European in Tokharian A. Lydian aλa- may also contain the stem al-, depending on whether the Lydian sign transcribed λ represents a velar rather than a palatal lateral (cf.Gusmani 1964:33)

We may perhaps also cite Ainu re 'three'. This form is found in Batchelor (1905) and in all other more recent sources. However in Dobrotvorskij (1875) we find a number of Ainu words beginning in tr- which have r- in later transcriptions. Dobrotvorskij's work is a large compilation, mostly containing his own recordings in Sakhalin but also all the earlier sources available to him. It is true that tr does not occur with complete consistency and the existence of words with initial tr- was disputed by Batchelor.

Several other observations regarding the relationship and subgrouping of Eurasiatic are in order. Altaic is described here in "traditional" terms as consisting of three branches Turkic, Mongol, and Tungusic. An examination of the etymologies in Poppe (1960) which includes Korean shows that it occurs much more infrequently than the other branches as defined in this work. Even Ramstedt (1952:I,104) the author of the hypothesis that Korean

is Altaic states also that "Korean is Altaic but has much in common with Ainu and Japanese which have a common origin." The work of Patrie (1982) which is concerned with the genetic position of Ainu, first compares Ainu, Japanese and Korean and then with Altaic proper and comes to the conclusion that Ainu is more closely related to Japanese and Korean than it is to Altaic. This conclusion is in consonance with that set forth in the initial section of this article, that Ainu, Japanese and Korean form a separate group within Eurasiatic and are not Altaic in the usual sense.

It is natural for Soviet readers to ask what the connection is between the Eurasiatic hypotheses and the Nostratic theory. If by the latter is meant that the six groups usually enunciated as "classically" Nostratic are related then there is no contradiction and I am in agreement. Moreover Korean is included in the Illich-Svitych etymological dictionary although under Altaic. A whole series of languages included by me in Eurasiatic have been considered to be Nostratic. As far back as Dolgopoloskij (1964) Chukotian was characterized as being "probably Altaic" although not included in his comparisons. Moreover, Yukaghir which is particularly close to Uralic is included by Dolgopolskij in his citations. Illich-Svitych in his introduction to the Nostratic dictionary (1971:61) in reference to Yukaghir notes that the work of Collinder, Angere and Tailleur while they do not allow us to consider Yukaghir a Uralic language do allow

us to consider its Nostratic character.

I believe this agrees with the work of the scholars mentioned by Illich-Svitych who certainly did not claim that Yukaghir was a Uralic language but was rather related to Yukaghir as a whole.

Dybo in an editorial footnote to the passage from Illich-Svitych just cited, adds that the same remarks probably apply to Korean and Japanese in relation to Altaic. Dolgopolskij (1984) in a comparison of personal pronouns includes not only Chukotian but Nivkh. Shevoroshkin and Markey (1986:50) referring to the work of Mudrak say that Eskimo-Aleut is probably also to be considered Nostratic.

Thus all the groups included here in Eurasiatic with the exception of Ainu have been asserted with more or less degree of confidence to be Nostratic. That it should also be included as having a special relationship to Korean and Japanese follows I believe from the work of Patrie which was mentioned earlier. Even Refsing (1986), obviously very conservative in such matters, in his grammar of Ainu cautiously endorses Patrie's conclusion.

There remains the opposite question. What of language groups included in Nostratic but excluded from Eurasiatic? I am by no means denying the relationship of these groups: namely Afroasiatic, Kartvelian and Dravidian but I believe these relationships are more remote. We have seen that Pedersen took the view that Afroasiatic is more distantly related to Indo-

European than is Uralic. Shevoroshkin, a leading representative of the Nostratic school in the United States has recently expressed his agreement with me on this matter (personal communication). Dolgopolskij does not even mention Dravidian in his earlier and later work in this connection. The only doubt in my mind that remains is in regard to Kartvelian which does, however, share a number of special features of vocabulary and grammar with Afroasiatic. If these, and no doubt other languages, are not Eurasiatic but are related at a deeper level to Eurasiatic languages, then the name Nostratic might fittingly, by tradition, be reserved for these languages. A primary task is then to ascertain the full membership and subgrouping of Nostratic as thus indicated.

As we have seen the notion of Nostratic as restricted to six branches, Indo-European, Afroasiatic, Uralic, Altaic, Khartvelian and Dravidian is really based on the Nostratic dictionary of Illich-Svitych (excepting for the occasional inclusion of Korean under Altaic in this work). Moreover this does not accord with the actual belief of Nostraticists, just as it did not with the inventor of the term Holger Pedersen. Why then were other languages not included? The answer along with a confirmation of my view of Nostratic as involving a larger group of languages than that found in Illich-Svitych's dictionary is to be found in a statement of two Nostraticists, Chejka and Lamprecht (1984:86). After discussing Pedersen and Illych-Svitych they say regarding

the six languages found in the latter's comparative dictionary: "Obviously this does not mean that the number of Nostratic families in the world is necessarily confined to the six mentioned. Illich-Svitych in his generalizations used only those language families for which the proto-linguistic bases have progressed to a satisfactory level."

In other word the Nostraticists have in practice first required a reconstruction of each family to be included. However this requirement leads to an arbitrary grouping. If classical Nostratic were to be viewed as a valid linguistic grouping in the sense discussed earlier, it would depend on the activity of linguists not on the languages themselves.

Although this view of the necessity of comparing proto-languages only is widely held it is not in conformity with the actual practice of Indo-Europeanists or those of a number of other stocks e.g. Afroasiatic. Proto-Indo-European was reconstructed before such entities as a Proto-Germanic or Proto-Slavic. Indeed, the reconstruction of Germanic without reference to other branches is incomplete because, to take one example, the consonant alternations of Indo-European in accordance with Verner's law is only explainable in terms of a reconstructed Indo-European pitch accent which had disappeared in Germanic itself. Indo-Europeanists have not first required the reconstruction of "Proto-Albanian" by comparing the Tosk and Gegh groups before bringing Albanian into general Indo-European

comparisons.

Moreover, the tendency of specialists in reconstructing proto-languages is sometimes to explain by improbable internal reconstructions or to simply disregard irregularities which turn out to be interesting and explainable in a broader historic context.

A very similar case in Nostratic is the exclusion of Yukaghir, criticized by Nostraticists themselves. In addition to two extinct dialects Chuvan and Omok, only known from imperfect recordings, there are two very similar Yukaghir dialects, Kolyma and Tundra. It is clearly not necessary to reconstruct Proto-Yukaghir before comparing it to other languages. In addition to the work of Nostraticists there have been numerous, mostly pairwise comparisons among branches or distinctively separate languages of Eurasiatic by linguists like Collinger, Bouda and Uhlenbeck. However the majority of pairs have never been compared. Languages which have been largely ignored in such studies include Aleut, which is never compared to any language except Eskimo and Yukaghir which has only been compared to Uralic. An overall comprehensive study in which all are brought into the comparison immediately shows fruitful results, just as it did in Indo-European when all the languages of the group have been brought into comparative studies of the family.

In Greenberg (to appear (a)) and (to appear (b)), I have treated specific problems of Indo-European in both an internal

and external framework.[3] In the present study I discuss certain aspects of the Indo-European vowel system, both from an internal Indo-European , and a broader comparative viewpoint.

Since the basic outlines of this system will be well-known to readers with an Indo-Europeanist background and have been discussed in considerable detail both in general handbooks and in specific monographs and articles, it will not be necessary to set forth the system as a whole. However, I will enumerate several important aspects of the system which will be more particularly the objects of the present discussion. I will mention them roughly in the order that they will be treated and the extent to which they constitute the focus of this study.

1. In the traditional Neogrammarian treatment, which has to a considerable extent survived into the present period, i and u are not true vowels in Indo-European but with their consonantally functioning allophones are sonants in the same class as r, l, m, and n. Thus i:y, u:w, r:r̥ etc. Just as r and r̥ are the zero grades of er ~ or in accordance with the qualitative apophony e ~ o, so y and i are the zero grades of ei ~ oi and similarly for w and u of eu and ou.[4]

2. The relation between ei and oi on the one hand and i ~ y on the other is called quantitative Ablaut and parallels that of e:o with zero, typically under unaccented conditions .One question that arises is the chronological relationship between qualitative and quantitative Ablaut, and, in the present context

whether either or both have correspondences in other branches of Eurasiatic so that we have to attribute them to Pre-PIE conditions inherited from an ancestral Proto-Eurasiatic.

3. The peculiar typological position of what is conventionally reconstructed as PIE *a will also enter into our consideration. What is remarkable is of course its relative infrequency which becomes even greater if we exclude those instances in which, with the development of laryngeal theory, one accounts for many instances of a as due to an adjacent laryngeal (H_2). It is also deviant in its lack of participation in the Indo-European system of vowel alternation. All this adds up to a marginal position for a vowel which on typological grounds would be expected to have high frequency and an important functional role in the vowel system.

I now consider more particularly the first point, namely the traditional Junggrammatiker treatment of i and u as sonants and therefore completely parallel to r, l, m, and n. Given this doctrine it is no more conceivable that there should be an alternation between i and e or u and o than between r and e or r and o.

This is clearly stated in what is, to my knowledge, the first book-length full scale discussion of the PIE vowel system as it developed in the work of Brugmann and his collaborators, namely the monograph of Hübschmann. In it (1885:193-4) he states very clearly:

"i and u are only consonants and cannot occur in any Ablaut series except with y or w. They can never be lost. Whenever they appear in any series as a vowel, they have arisen by a secondary process."

The reason for this last statement was that in fact Hübschmann was aware of a fair number of instances, particularly in Greek, Slavic, and Baltic, but also in Indic and in Latin in which i alternated with e between languages e.g. Slavic izu < jĭzu <*ĭzu = Greek, Latin eks "out of", or between dialects of the same language e.g. Attic hestía "hearth" = histía in other Greek dialects or as variants in related forms within the same dialect e.g. Old Church Slavic večerŭ "evening", vĭčera "yesterday". Examples are also to be found of u varying with o.

There have been many statements of puzzlement regarding the i ~ e and u ~ o alternations which, of course, are in contradiction to the basic assumption that i and u are merely sonants and not part of the Proto-Indo-European vowel system. Here are some of the remarks regarding this problem that I have noted in the course of my research.

Güntert (1916:28-9), says concerning Greek forms in i and u where e and o would be expected: "These words have always been a true dilemma (eine wahre Crux) for scientific linguistic investigation." Kretschmer (1891:378) notes, once more in regard to Greek that "we find traces of unaccented vowels whose nature up to now has been completely puzzling (rätselhaft)". Brugmann in the second edition of the Grundriss (1897, I, 119) notes, once more in regard to Greek that "in many forms i appears where we

could expect e without it yet having been possible to explain i in a satisfactory way."

In regard to Slavic in the standard Old Bulgarian grammar of Leskien (1910:17) it is noted that "the alternation between u and o is unclear." Senn, in his comparative grammar of Lithuanian (1966:78) states: "One of the commonest deviations (Entgleisungen) in Ablaut Series I is the introduction of an -i- grade without the help of a liquid or nasal."

In regard to Indo-European *eĝhs "out of" in which, Greek and Latin e correspond to Slavic and Baltic i, the standard Indo-European comparative dictionary of Pokorny (1959:I, 28) refers to the Slavic and Baltic forms as having a "difficult i" ("mit schwierigem i"). Referring to the internal Slavic dialect variation in the numeral "four" četyre and čĭtyre, Meillet (1934:48) says "il serait imprudent de rien affirmer à ce sujet."

In his standard comparative grammar of Greek Schwyzer (1939:I, 135) not only admits the i ~ e alternation in Greek but also u ~ o and notes that these often correspond to the same alternations in Slavic.

In Indo-Iranian there are instances of i alternating with a < *e or corresponding to e in other branches of Indo-European. Gamkrelidze and Ivanov (1984:259) cite Sanskrit śíras "head" as cognate with Greek kéras "horn" and the variant forms śikvan and śakvan (< *śekvan) "intelligent." These forms according to the authors "contain an i of uncertain origin". Another Sanskrit

example is sama "same" and sima "each" (cf. the earlier cited Ainu sem "one"). Within Indo-Iranian Avestan -čina which forms indefinite, generalizing pronouns and is cognate with Sanskrit -čana (< *-čena) are discussed below.

However, in the more recent period, starting, it would seem with Kurylowicz (1956) , we find a number of outstanding Indo-Europeanists who recognize that an autonomous i and u existed in addition to the i and u which were zero grade of ei and eu. These include Szemerényi (1967), Gamkrelidze and Ivanov (1984) and Mayrhofer (1987). As Szemerényi (1967:71) states it: "Starting from the observation that i and u often represent the nil-grade of ei and eu they assume that i and u always represent the nil-grade of the aforementioned sequences." This, of course, by no means follows and in Szemerényi's view assuming so gives us a false sense of security.

Moreover, as Szemerényi, Schmidt-Brandt (1973) and others have pointed out, many examples of ei involve earlier independent i in which e has been introduced analogically and the same would follow for u in relation to eu.

If, indeed, there were independent i and u phonemes one would expect them to be reasonably frequent on typological grounds (especially in the case of i) and perhaps to participate in the system of qualitative alternation so that the apophonic series e:o would have been to begin with, but one alternation within a larger system, one which had already in PIE times spread

analogically and had become partially grammaticized (e.g. e present stem versus o perfect stem), while the others only survived in a marginal and sporadic way.

It is quite clear what these alternations in which i and u participate would be, since we have already encountered examples of e ~ i and o ~ u. Before the period initiated by Kurylowicz regarding the independent status of i and u, these alternations were treated in two ways. On the one hand they were ignored or the attempt was made to explain them away by ad hoc phonetic changes e.g. the explanation of the deviant u of Greek núks "night" as against o elsewhere by Brugmann (1897, I: 598) as due to the labiovelar articulation of the k.

On the other hand, starting with Güntert (1916) some Indo-Europeanists posited an alternation between i and e as well as u and o. Güntert and those who followed him considered i and u to be reduced forms of e and o respectively under unaccented conditions. They therefore assumed an additional reduced grade between full and zero. In Güntert's terminology these reduced members of the short vowel series were called schwa secundum in distinction from the generally accepted schwa (Indo-Iranian i, but reflexes of PIE *a in other branches) which were zero grade of the long vowels and which they then called schwa primum. The most prominant adherent of the theory of schwa secundum was doubtless Hirt but other Indo-Europeanists e.g. Meillet assumed some form of the reduced grade.

Moreover, if we accept the existence of an independent i and u which does indeed alternate with e and o respectively as proposed by the adherents of the theory of schwa secundum, then we can see easily why, as assumed by Szemerényi and Schmidt-Brandt among others, there will be examples of secondary ei and eu in which e is of later analogical introduction.

Given, to take the instance of i, the generally recognized alternation e~ei, and the alternation of historically independent i in e:i which was receding before the series based on e:o, we find e participating in both alternations and under such conditions the normal expectation will be that an e which originally alternated with i will replace i in a large number of instances with the more popular and expansive ei.

Finally, one may ask what evidence there is that in the alternation i:e and u:o, i and u are reduced vowels. First it should be noted that as Baldi (1983:16) states "we are very uncertain about the original position of the accent in many forms." There are, however, several clear instances in which i is practically certain to have been accented. Therefore the most probable conclusion is that original i and u were simply indifferent to the Indo-European accent and could occur with or without it. Another possibility considered below is that in some instances i or u became zero when unaccented.

Among the instances in which accented i seems virtually certain are the following. One is the interrogative pronoun

*kwi- one of the forms cited as involving an original i by Gamkrelidze and Ivanov and concerning which Szemerényi asks rhetorically (1978:186) "But how could the strongly accented interrogative pronoun *kwis, *kwid be weakened forms?"

Of course the same root does occur in unaccented form as an indefinite pronoun in some languages e.g. Greek, but we know that indefinites derive from interrogatives and not vice versa. Moreover we shall see later that this root is widespread in Eurasiatic in its interrogative meaning. Another example is the first person present of the verb "to be" which in West Slavic shows the reflexes of original *is-mi. If the Indo-European root accent is certain in any grammatical category, it is in the singular present active of -mi verbs. Note also that Gamkrelidze and Ivanov in regard to the Sanskrit forms in i cited earlier, namely śiras "head" and śikvan "intelligent" say that these examples of i cannot be schwa secundum.

The view presented here therefore is that not only are there independent phonemes i and u but that they alternated with e and o respectively. This view has now been fully accepted by a number of Indo-Europeanists e.g. Mel'nichuk (1979), Palmaitis (1980) and more recently Speirs who does not cite the previously mentioned authors. Speirs (1984;39), regarding i ~ e notes that "it embraces many forms whose vocalism has constantly defied explanation in traditional theory." The i ~ e alternation is, of course, much more frequent than u ~ o as might be expected

on general typological grounds, because it involves vowels which are in general statistically more common. In my extra-Indo-European comparisons I will be concerned mainly with the i ~ e alternation.

A further significant observation was made long ago by Pedersen (1904), namely that, contrary to the assertion of Hübschmann, which was cited earlier, i and u may in fact disappear. This is in consonance with the notion that quantitative Ablaut is a more recent phenomenon than qualitative Ablaut, a theory posited by Kurylowicz (1937:205) and already at least hinted at by Saussure (1879:135) on the grounds that whereas the conditions for the zero grade in quantitative Ablaut were in a fair number of instances clear (absence of accent) this was not true of qualitative Ablaut. Indeed although attempts to explain the latter on internal grounds in Indo-European have consistently failed, it is still an article of faith with many Indo-Europeanists that there was a "pre-Ablaut period." Of course everything had a beginning but for reasons which will appear, I believe that qualitative Ablaut conventionally symbolized e ~ o was part of a larger system of alternations which goes back to Eurasiatic.

It follows from what was said above that some IE roots reconstructed with root vowel e must have an e which goes back to an e ~ i rather than an e ~ o alternation. These tend not only to alternate with i, but have few or even no forms with o.

One of them is the root es "to be". We have already mentioned the West Slavic form for the first person singular present is-mi. From the same root we find in Old Church Slavic istu "true" and istina "truth". There is also the Greek second singular imperative ísthi. Outside of Indo-European, Korean it- is a late development of isi- "be, exist, remain" (Ramstedt 1939:71). In Kamchadal, the language which forms a genetic group distinct from the rest of Chukotian (Chukchee-Koryak) there is an auxiliary verb is "to be" (Bogoras 1922:76708) which in the vowel height harmony system of the language has the low variant es[4]. In Ainu there is a negative existential isam "there is not" probably analyzable as is- "to be" and -am "negative"; There is also the positive verb isu "to be".

Once we admit that the basic alternants of the stem are is es and s , the problems of the Indo-European s-aorist can receive a reasonably satisfactory and consistent solution. The formation of a past tense by suffixing a verb meaning "to be" is, of course well attested. In regard to Latin, the perfect second person singular and plural suffixes is-tī and is-tis are generally admitted to contain the aorist s and to derive from is which is also found in the perfect infinitive dīx-isse, pluperfect indicative dīx-eram and pluperfect subjunctive dīx-issem. However they must, by current doctrine be separated from the forms of the verb "to be" esse,eram and essem which should go back to es. The Greek ewéid-e(s)a "I knew" traditionally a

pluperfect was already seen by Brugmann to be an -es aorist. The Sanskrit -is aorist cannot have its i from schwa because this corresponds to the reflexes of a elsewhere. No doubt Sanskrit i has spread here analogically in Set bases.

Another Eurasiatic root containing the e ~ i alternation is the Indo-European form usually reconstructed *deik- "to show, point out". The basic meanings seem to be "index finger" and then metonymically "to point". Latin digitus "finger" is probably derived from this root. In addition to the full grade ei, and the zero grade i according to the usual account, e survives in several Greek forms which cannot be explained away. The stem of the verb in the form dek- is well attested in literary Ionic as well as epigraphically in Chios and Miletus (Bechtel 1924, III.180). These forms are passed over in silence by Schwyzer in his grammar and Frisk in his etymological dictionary (1960-70). In his dictionary Bailly (1895) simply says that Ionic has suppressed the i of the radical ei leaving the stem e. This is a description, not an explanation. Prellwitz (1905) says that the Ablaut pair e:ei has replaced the older alternation i:ei while Chantraine (1968-80) admits that it can't be explained. Hofmann (1950) says that dek- is supposed to have replaced dik- but admits that this is impossible and says that he has no hypothesis of his own. Buck (1910:45) says that Ionic dék-numi is perhaps a blend of deik- and dik-. These are just some of the cases in which Greek etymologists simply leave e ~ i or o

~ u unexplained, ignore it, or set up ad hoc hypotheses.[5] Hittite tekussami is another example of the e- grade in this root. In cases like Sanskrit diś "direction" and Latin dicis causa " there is no reason to assume that i of the root is a reduced vowel. In Eurasiatic it always appears as tek or tik and never is teik. In Eskimo we find West Greenlandic tiki-q "index finger" (-q is the absolutive), with similar forms in other Eskimo dialects, both of the Yuit and Inuit groups. West Greenland also has a derived verb tikkuagpaa "he points to it". Ainu has tek, teke "hand" (Batchelor), and Dobrotvorskij has also recorded atiki "five". From the meaning "finger" we also get the meaning "one", from its use as a unit in counting. Korean teki "one, guy, thing" probably belongs here as do a number of Turkic forms e.g. Osmanli tek "odd (number), only, sole" and teken "one by one", Chuvash tek "only, just", Old Turkish (Uigur) tek "only, merely" etc..

A third Indo-European root in which there is both internal and external evidence for this alternation is bher- "to carry"; Old Church Slavic bĭrati "to take", present berǫ "I take" is matched exactly by the Chukchi verb "to take", which has the variants per ~ pir in a vowel harmony system based on height. Chukchee has only a single class of stops. Probably also Old Turkish bir, Osmanli ver "give" belong here. I will consider this Turkish alternation later.

In a fourth important example, it is once more Slavic which

agrees with non-Indo-European Eurasiatic languages. In the oblique cases of the first person singular Slavic shows i in the instrumental mĭnojǫ, and the dative-locative mĭně but mene in the genitive-accusative. The same variation between a stem form in e and i is found in Uralic and Altaic. Rédei and Erdélyi (1974: 399) reconstruct mi-nä and me-nä as variant Finno-Ugric forms of "I". In the Turkic branch of Altaic, we find in Old Turkish (Gabain 1950:91) ben,men and min as the nominative "I" and the same variants for the stem of the oblique cases. In Mongolian bi "I" alternates with the stem min- in the oblique cases. Tungus has exactly the same alternation as in Mongolian.

There are two additional instances of i ~ e alternations within the same paradigm which are, unlike the just cited example of bher ~ bhir, generally reconstructed as Proto-Indo-European. One of these is the already mentioned interrogative pronoun in which it is generally admitted that the nominative singular stem was kwi- (common gender, kwi-s nominative, kwi-m accusative, neuter kwi-d) and for which in the oblique cases of the singular the stem kwe- is generally reconstructed except in the locative, e.g. genitive kwe-syo (Szemerényi 1970: 270:269). The stem form kwei- only occurs in the plural.

Even here there are indications of i grade in the plural. The plural neuter qui-a survives in Latin as a conjunction, and in the dat.abl. plural quibus. The Hittite nominative plural

kues also written ku-i-es shows e grade. In Lydian the two alternants have developed into separate paradigms as relative pronouns, qi- and qe with qλ in the oblique possibly showing zero grade. There is the usual attempt to explain this away (Gusmani 1964:181). He maintains that either there is an internal Lydian change from qi to qe (it would be the only example of such a change) or qe goes back to qei, for which there is not the slightest evidence. It is my conjecture that the stem kuei- which is only attested in the plural contains the same plural -i as in the demonstrative toi etc. and is either original or, more likely, the result of contamination with it. The true zero grade is probably ku- as in Sanskrit kuha "where?" and numerous similar forms.

The other important example of a reconstruction of the e ~ i alternation for Proto-Indo-European is the parallel case of the demonstrative stem seem in Latin nominative singular masculine i-s for which Szemerenyi reconstructs (1978:268), masculine nominative singular *is, accusative *im; neuter nominative and accusative singular *id, contrasting with oblique singular *e- in the genitive masculine *esyo and other singular case forms. Once more the stem ei- only occurs in plural forms. Szemerényi himself argues (op. cit. 267) against the attempt to take the alternation ei ~ i as historically basic with later thematicization, asserting that such a process is found in no other pronoun and must be rejected. Both kwi ~ kwe and i ~ e are

widely found in Eurasiatic. Both forms show intralinguistic dialect variation and cross linguistic variability. In some languages with vowel harmony systems they are, as in the already cited example of Chukchi pir ~ per "to take", vowel harmony variants. The significance of this will be discussed later.

In regard to kwi ~ kwe it appears as an independent interrogative, "who?" or "what?", in numerous interrogative adverbs, as a coordinator (cf. Indo-European kwe) and in some languages as a question particle or indefinitizer. It is found in one or more of these functions in every branch of Eurasiatic, including Uralic, Yukaghir, all three branches of Altaic, Ainu, Korean, Japanese, Nivkh , Eskimo, and Aleut. Details of all these occurrences, which would require a paper in itself, will be set forth in Greenberg (in preparation).

However we will be interested here in an instance in which an Indo-European marginal element, that is not explainable within Indo-European, occurs elsewhere in Eurasiatic in the same combination and in which these other occurrences help us in at least envisioning a possible explanation. This is the form reconstructed in Pokorny (1959:641) as *kwene which occurs in Indo-Iranian and Germanic with indefinite or generalizing meaning. In both language groups it occurs suffixed to interrogatives. The examples include Sanskrit -čana as in kaś-čana "anyone" and Avestan -čina with similar use and meaning. In Germanic it is found in Anglo-Saxon, Old Saxon and Old High

German in hwer-gin "somewhere" and from the frequent use of the indefinite with negative it takes on a negative meaning in Old Norse hvergi "nowhere". Pokorny gives the Germanic proto-form as *-ǰin (with grammatical change). Moreover the -i in Avestan čina cannot be dismissed since i everywhere else corresponds to Indic i. The Sanskrit form with its palatal consonant must of course arise from kwe-. That the first part then is kwe ~ kwi and that it derives from the root kwe ~ kwi found as the common ordinary interrogative in Indo-European is clear. The semantic development of interrogatives into indefinites and generalizers is a commonplace change. But what are we to make of the second element *-ne, *-n for which no internal explanation within Indo-European has ever been suggested to my knowledge? In fact ordinary interrogatives of the form ken or kin are widespread in Eurasiatic. Examples can be quoted from Finno-Ugric, Yukaghir, Mongolian, Nivkh, Aleut and Eskimo and perhaps also from Turkic. However, forms in ke, ki also occur e.g. Kamchadal k?e "who?", Hungarian ki "who?", Kola Lapp ke "who?". Sometimes forms with and without the n(a) occur in the same paradigm and from these examples it is possible to arrive at a notion of the original function of -n, -ne. In the Finnic subgroup of Finno-Ugric we indeed find ke- and ken-. This is clearest in Ingrian in which ken is the nominative singular but the oblique singular is based on the stem ke, and the nominative plural is ke-t. In Finnish itself the usual nominative is ku-ka,

cf.mi-kä̆ "what?" but the archaic nominative singular in ken and the stem ken- is still found in some singular case forms e.g. ken-en (gen.); ken-essa (inessive etc.) That the stem is really ke is shown once more by the nominative plural ke-t-ka. In Kola Lapp, by a semantic development parallel to that of Indo-European we find the generalizing pronoun kene "anyone".

The historical separateness of ke and ne is shown by the fact that the plural of this generalizing pronoun is ke-g-ne in which g > k represents a widespread Uralic dual or plural and that the ordinary personal interrogative is ke whose plural is ke-g.

Finnish and other Balto-Finnic languages have kin or ki as an indefinitizer suffixed to various case forms of the interrogative stems jo- or ku-, e.g. Finnish jo-ssa-kin 'somewhere'. Whether this -kin is a borrowing from Germanic I cannot say. I fail to find any discussion of this matter in the two standard treatments of Germanic borrowings in Finnish, those of Thomsen and Collinder.

Elsewhere as the simple interrogative in Finno-Ugric, kin rather than ken may appear (e.g. Zyryan kin). Rédei and Erdélyi (1974: 398) reconstruct kin~ken for Proto-Finno-Ugric.

The non-Chuvash Turkic languages have kim for "who?" and Chuvash has kam. Whether this final -m is related to the -n of the other Altaic languages I cannot say.

In Yukaghir kin is "who?". In Mongolian ken is who?" and -n

has been extended throughout the singular, but the plural ke-d shows that -n is a historically distinct morpheme.

An enclitic ha-gin is found in Nivkh suffixed to interrogatives with indefinite or generalizing force e.g. aŋ "who?", aŋ-ha-gin 'each one, anyone'. It is particularly common with negatives. That it is an enclitic is shown by its following inflectional markers on the interrogative as in aŋ-ux-ha-gin "from anyone". The analysis of ha-gin as composed of ha "to be" followed by gin is transparent. It may also be suffixed to other substantives as a marker of focus, e.g. if-ha-gin, in which if means "he/she". This seems analyzable as "he/she who is". The use of a copula with a relative pronoun as in English "He who is..." is, of course, a frequent method of focusing in languages. The path of semantic development into a generalizing interrogative is not clear to me although the identity of ha-gin in the two uses is obvious and the focusing use follows more easily from its etymological analysis.

It is in Eskimo and Aleut that the original function as an an absolutive singular or possibly a nominative singular in an accusative system found in the other languages becomes clear. In Eskimo and Aleut ki-na in the ergative systems of these languages is "who?" in the absolutive singular. The other cases are built on a stem ki-tum- in Alaskan Eskimo with corresponding formations in other dialects. The dual and plural are built on kin, kin-ku-k and kin-kut respectively.

What is distinctive about Eskimo is that the -na of the singular absolutive is not confined to the personal interrogative but is found in su-na "what?" and the large class of demonstratives e.g. ta-na "that". In these other non-interrogative forms the -n is not found in the dual or plural e.g. ta-ku-k, ta-ku-t and the singular non-absolutive stems is ta-m-, thus -na is clearly the marker of the singular absolutive.

The situation in Aleut is similar to that in Eskimo in that the word for "who?" is kin and this stem is taken as the basis for dual kin-ku-k and the plural kin-ku-t. As in Eskimo the -n form is also found in demonstratives but here it is confined to the singular e.g. wa-n "this"; wa-ku-k (dual), wa-ku-s (plural) (Unalaska dialect). Aleut has no inflected case system so the question of an oblique stem does not arise.

Outside of Eskimo and Aleut, the only branch of Eurasiatic in which -n or-na is found outside of the personal interrogative "who?" is Uralic for which a third person pronoun *se-n > Finnish han, plural *se-k is reconstructed. Once again the absence of -n in the plural shows that -n is not a part of the stem.

The conclusion that emerges from this review of the facts is evidently that Indo-European -ne in kwe-ne was originally the marker of either the absolutive singular in an ergative system, or the nominative singular in an accusative system. It was probably confined to the personal interrogative where it is found in all the languages in which it occurs and its

appearance in Uralic *se-n and the Eskimo and Aleut demonstratives is probably the result of a later analogical spread.

We have seen that the usual Indo-Europeanist reconstruction of the anaphoric and demonstrative exemplified in Latin i-s involves an alternation between i- in the nominative and accusative with e- in the oblique cases for the singular, parallel to that which we have seen in the interrogative stem kwi-. Here also there are numerous related forms in other branches of Eurasiatic which are, as in Indo-European, near demonstratives e.g. Sanskrit iy-am "this" or pronouns as in Latin i-s. A further typological change is one similar to what occurs in many English-based pidgins in which, for example, hitem < "hit him", means simply "hit" and the -m is employed quite generally as a mark of transitivity. This development which, as we will see, is at a transitional stage to becoming a pure transitivizer will be discussed below in relation to Nivkh and Ainu.

Uralic has a near demonstrative that, as in Indo-European, shows variation between e and i. This can be illustrated from Hungarian e-(z) "this" (cf. a-z "that") but i-tt "here". This latter has a dialect form e-tt. Collinder (1965:56-7) not only connects the Uralic and Indo-European form, but also cites the similar vowel alternation as supporting evidence. Setälä (1915:32-3 had made the same comparison between Uralic and Indo-European and stated that it could not be the result of chance .In Yukaghir, in the Kolyma dialect, one of the two closely related

dialects of the language which survives, -i forms the third person singular present-preterite of intransitive verbs. It also occurs in the same class of verbs in the future-t-i in which t is clearly a future mark.

All three branches of Altaic concur in *i as the third person singular pronoun. In Turkic it survives in -i ~ -y (front and back vowel harmony variants) suffixed to nouns ending in consonants to mark the possessive e.g. Turkish ev-i "his, her house". It is also found, as in Indo-European in adverbs of near deixis e.g. Sagai i-dä "here". This latter form strikingly resembles Sanskrit i-ha < i-dha "here". In Mongolian it occurs in the independent third person pronoun, but only in the oblique cases e.g. Classical Mongolian i-mada "to him/her". On this basis Mongolicists reconstruct *i and assume that it formerly existed in the nominative in that form. Mongolian also provides evidence for the e variant in Classical Mongolian e-ji "to do this", with which we may compare te-ji "to act in that manner" and je-ji "to do what?". The initial components of the two latter forms have, of course, obvious correspondences in Indo-European and,it may be added, a number of other branches of Eurasiatic. Mongolian provides further evidence for e in the demonstrative e-ne "this" (pl. e-de).

The situation in Tungus is similar to that in Mongolian in that i as an anaphoric pronoun does not survive in the nominative. However Manchu is an exception since it retains i

as the nominative of the third person singular pronoun. The form with the vowel alternant e is found in Tungus demonstrative pronoun reconstructed by Benzing (1955:106) as *e-(ri) "this one". That this is the correct analysis is shown by comparison with Tungus ta-(re) "that one" and Mongolian te-re "that", pl. te-de. The substantivizer re ~ ri is also found in Ainu a-ri "that one" and Japanese ko-re, so-re etc. "this one", "that one".

In Korean the near demonstrative is i and it precedes the noun it modifies. It also survives in the adverb i-mi "now". In Japanese in addition to other possible occurrences which will not be discussed here, it is found in the adverb i-ma "now" (cf. Korean i-mi cited above). In Japanese ma is also found as an independent noun meaning space or time.

In Nivkh, all dialects have a prefixed i- for third person singular possessive. The fact that the consonant grade of the initial consonant of the noun is a voiced stop when the basic form is a voiced unaspirate e.g. kan "dog", i-gan "his her dog" shows that we have the nasal grade in a system which is typologically extremely similar to that of Celtic. It therefore goes back to *i-n-gan with an n genitive which is very widespread in Eurasiatic (and beyond) which is not further illustrated here. The vowel harmony variant e- is only found in a few nouns and is obsolescent (Panfilov 1962:160). The nominative singular third person pronoun is i in the Sakhalin dialect, while in the Amur dialect it has been extended by means of a suffix -f. This i is

subject to lowering by the height vowel harmony rules of Nivkh which only functions in a few constructions such as this one. For example the dative in the Sakhalin dialect is e-rx <*e-tox cf. Amur if-tox. The most interesting development typologically in Nivkh is that a prefixed object to a transitive verb is in the course of developing into a transitivizer. This pertains only to a particular but important class of verbs. The rule is that the e ~ i (depending on height harmony rules) must be present if there is an object which is not expressed in the clause, but it is not present when the object is overtly expressed.

For example, in a sentence "He came, he ate and he went away", "eat" would have a prefixed i-, namely i-n-d' (d' expresses the indicative here). If, however, the object is expressed e.g. "he ate meat" the form would be ni-d' showing the underlying high vowel of the stem ni. Since e ~ i can only occur with transitive verbs, there is the possibility that it would be reinterpreted as a transitivizer and become part of the verb stem.

This is exactly what has happened to alternant e in Ainu according to Batchelor who describes it as a prefix to intransitive verbs which makes them transitive e.g. mik "to bark", emik "to bark at." However, he has a separate entry in his dictionary which seems to indicate a survival in its presumably earlier use as a third person object, both with and without the object noun being present e.g. seta e-ikka "the dog

stole it", ainu seta e-ikka "the man stole the dog." The alternant in i- also exists and according to Refsing (1986) is what he calls a pseudo-intransitive. The rule he gives exactly matches that of Nivkh e ~ i , that is, it occurs as an indefinite specific object when the noun object is absent from the clause and it is absent when the noun is present.

What has been shown up to now is that the e ~ i alternation is of Eurasiatic date and that in certain languages, the two vowels appear as alternants in a system of vowel harmony based on height.

We shall first consider a number of these systems, the part that the e ~ i alternation plays in them and the nature of the phenomena which appears when these, or as a matter of fact, any vowel harmony system breaks down. The first example we shall consider is the Chukotian family. Basically the same system occurs in all of the languages of the family as is shown in figure 1.

High	i	e	u	ə
Low	e	a	o	

Figure 1. Chukotian vowel system

The general rule, to which there are however, a few minor exceptions is that all the vowels in a word must be high or ə, or they must be low or ə. Thus ə is a neutral vowel. However, in

almost all cases it is possible to distinguish it as underlyingly high or underlyingly low. It is a phonetically reduced vowels. The conditions under which this reduction took place cannot be stated and it may therefore historically represent a former pair of vowels distinguished by height which haved merged. Bogoras in his description of Chukchi distinguishes phonetically the high partner of a, which he writes ӓ from the low partner of i.

High	i	ӓ	u	ə
Low	e	a	o	

Figure 2. Chuckchi vowel system (Bogoras)

Of the two grades the low is dominant in that if any morpheme whether in a stem or affix has a basic low vowel it lowers all basic high vowels to low. An example is the word for "earth" which is in the absolutive singular nutenut (reduplicated form), whereas the ablative singular is notajpə in which the basic low vowel a of -ajpə has lowered the basic u of the stem *nut- to not.

Middle and Old Korean had a system of height harmony similar to that of Chukotian. In the present literary language and in almost all dialects it has broken down but leaves certain survivals which will be described below.

The old system of height harmony as reconstructed for

fifteenth century Korean by Hayata (1975) is shown in Figure 3.

Feminine	e	y	u	i (neutral)
Masculine	a	ʌ	o	

Figure 3. Early Korean vowel system

The terminology feminine for the high grade and masculine for the low grade, which we saw was dominant in Chukotian is found in a number of other eastern Asian languages. In the modern literary language, as we have seen, this system has broken down but there are variant forms, onomatopoeic, often reduplicated terms called by Martin, Lee and Chang (1967) in their dictionary, heavy and light isotopes for high (feminine) and low (masculine) variants respectively. Examples are solsol, sulsul, (soft-flowing, softly, gently) and katak, ketek "damp". There are also non-reduplicated variants such as mas and mes, both meaning "taste, flavor". There are also a fair number of instances in which one dialect retains one variant and a different dialect the other one. For example, in the suffix of the present tense North Korean has -ku and South Korean -ko (Ramstedt 1957, I:34).

All students of Nivkh are agreed that it once had a fully functioning system of height harmony. Outside of the third person marker i discussed earlier there are considerable survivals in the numeral classifiers. The system can be easily reconstructed

as shown in Figure 4. There are no neutral vowels.

i	y	u
e	a	o

Figure 4. Nivkh vowel harmony system.

In addition, however, to its functioning with the third person object e ~ i and the considerable survivals in the numeral classifier systems, there are fairly numerous instances in which of the two major dialects treated in Savaleva's dictionary, one variant survives in the first dialect, and the other in the second. Some examples are given below in Table 1.

Amur	Sakhalin	
tyk	tak	"be hot"
park	pyrk	"only"
nik	nek	"recently"
mut	mot	"pillow"

The first example is representative of the most common type. The Amur dialect in numerous forms prefers y where Sakalin has a.

In addition to these cases of interdialectal variation, there are instances in which both variants are present in both dialects with semantic differentiation. Examples include lyx "stormcloud", lax "rain, and vi-(d') "go", ve(-d') "run". Another example is noɣ "be fragrant", nuɣnuɣ "smell"

(transitive). This latter case is particularly interesting because it shows the possibility of the exploitation of the surviving variants for grammatical purposes, in this case, transitivity.

In other instances in which we find that vowel harmony system have broken down very similar phenomena are found e.g. in Iranicized Uzbek and in the south Mongolian languages. This matter is not pursued here.

As appears from the preceding exposition the Indo-European variants i ~ e, e ~ o, u ~ o show the same characteristic of intradialect variation, cross language variation, semantic differentiation and occasional grammaticization which characterized languages with formerly functioning vowel harmonic systems. Moreover two of the pairs i ~ e and u ~ o can be clearly recognized as involving relative height differences. A number of Indo-Europeanists, in view of the typologically deviant position of a as generally reconstructed and the fact that in most languages its reflexes are identical with those of o, have suggested that the e ~ o alternation is to be reinterpreted as e ~ a. If this is accepted then we may reconstruct the pre-Proto-Indo-European vowel system as one involving height harmony and taking the form shown in Figure 5, which is identical, except for the Chukotian reduced vowel, to that shown in Figure 2.

High	i	e	u
Low	e	a<o_1	o_2

Figure 5. Proposed Indo-European Vowel Harmonic System.

We are making the assumption here that, as has been assumed by a number of Indo-Europeanists as early as Saussure (1879:135) there are a number of Indo-European roots with "stable o" (here o_2) which did not alternate with e. These include such words as "eight" (Latin octo), "in front of" (Latin pro) and "pig" (Latin porcus) that never seem to show an alternation with *e. Of course, one could argue that they once existed, but I believe that their occurrence in a number of isolated noun stems makes this unlikely.

A number of prominent Indo-Europeanists have wished to eliminate traditional *a altogether or consider it a late "hole-filling" development deriving from expressive terms e.g. for defects as in Latin laevus "left-handed" and caecus "blind" and from e with adjacent H_2. I hesitate, however, to eliminate it entirely. It may represent a neutral vowel resulting from the prehistoric merger of a fourth pair of variants. We noted in the initial section of the paper the correspondence of a in Indo-European al(i)- "other, second" to similar forms elswhere in Eurasiatic. Another possible example is *anti (Pokorny 48-9) "in front of, opposite" Hittite hanti which may be compared to Korean anthe with the same meaning. Here we would have metathesis of

aspiration in the Korean form.

I have not yet dealt with the fact that the Uralic languages and the Turkic and Mongolian branches of Altaic have back-front harmony rather than one based on height. These are difficult questions and I can only treat them in a preliminary way here. To begin with Uralic, Uralicists themselves have not agreed as to whether the system goes back to Proto-Uralic times or not. Attempts to reconstruct the Proto-Uralic vowel system have encountered great difficulties and on any account there must be numerous exceptions. There are two main approaches. One associated with the name of Steinitz (1950) notes widespread level alternations and therefore assumes a whole series of such alternations in Proto-Uralic. The other represented by Itkonen (1954) assumes that with a few deviations Finnish has retained the proto-Uralic vowel system and that it is one of front-back harmony. This latter view is now the one favored by Uralicists.

Collinder, whose work forms the basis for all reconstructions of proto-Uralic at the present time, in the very volume which contains the first reconstructions which specified the vowels of the initial syllable, not merely whether the word as a whole had front or back harmony, stated regarding the Uralic vowel system, "Notwithstanding the pioneer work of Genetz, Lehtisalo, Steinitz and Erki Itkonen, we have not yet a clear picture of the vowel system of PU or PFU (1960: 149)". Regarding the two theories outlined above, although his reconstructions are

essentially based on Itkonen's approach, he makes the following rather equivocal remarks, "It is quite legitimate to conclude (with Setälä, Lehtisalo and Steinitz) that there existed several vowel alternations in PFU and PU. But on the other hand it is worthwhile to try (with Erki Itkonen) to get along without this hypothesis (ibid. 151)".

We have seen that both Collinder and Rédei and Erdély admit height alternations in some instances including the very forms with which we have been concerned in this paper, namely ki~ke, kin~ken, i~e and min~men.

It is my conjecture that Pedersen's cryptic remark, reported in the initial portion of this study (1935: 308), in which he describes back-front harmony as recent in Uralic and then compares Indo-European Ablaut to "numerous other cases in which an internal explanation cannot be found" in Uralic, must refer to the interlevel variations which had already been studied in Setälä (1896), the pioneer work using the approach later found in Steinitz and Lehtisalo. In fact there is no contradiction between the two approaches if we assume that the level alternations are earler and the back-front harmony is a Uralic innovation.

The situation is somewhat similar in Turkic. For non-Chuvash Turkish a back-front harmony system without neutral vowels such as are posited for Uralic, is certainly inherited.

The system as it is found in almost all Turkic languages and also as reconstructed for Proto-Turkic is shown in Figure 6.

Front		.	Back	
i	ü	.	y	u
e	ö	.	a	o

Figure 6.

However, the example of intra-height variation given earlier in regard to the verb "to give", Old Turkish bir as against Osmanli ver "to give" is by no means an isolated example. Thus even within Old Turkish which is dialectally heterogeneous (Orkhon inscriptions, Yenisseian inscriptions, Uigur manuscripts) numerous words with i in the stem have variants in e without there being a regular correspondence. In general in Turkic languages as Menges (1968:75) notes there is variation between e and i "often occurring side by side in one and the same dialect of a given language." Some have sought to account for it by assuming a third vowel intermediate between e (often written ä) and i. Similarly there is a sporadic height alternation between a and y in Old Turkish (Gabain 1950:49) where the variation between e and i is also noted and examples given e.g. both byrt- and bart "to break". Turkic languages also show cross linguistic variations between o and u, e.g. sora sura, "to ask" and between ö and ü as in söjla and süjla "to speak. Menges (ibid.) says such variation is general in Altaic.

In Tungusic, the third branch of Altaic as traditionally defined,

all of the languages either have a system of cross-hight harmony or one derivable from such a system historically. Benzing (1955) reconstructs four pairs of vowels differing in relative height. In a number of languages, Russian investigators have noted that there are voice quality distinctions between the set of lower vowels, which they call "hard" and the higher members they call "soft". In the eastern dialect of Even it is reported by Novikova (1968) that the hard vowels are pharyngealized.

The Even vowel system is shown in Figure 7 in which differences of vowel length are disregarded.

Soft	i	u
Hard	I	U
Soft	e	o
Hard	a	o

Figure 7. Even Vowel System

This system is strikingly reminiscent, from the typological point of view, of many systems in West and East Africa (e.g. Akan, Masai). Here investigators have shown that we are dealing with [±ATR], that is advanced and retracted tongue root. In the Tungusic languages the "soft" vowels would be +ATR and the "hard" vowels -ATR. This was my own conclusion and I later discovered that Ard (1981) had arrived earlier at the same conclusion.

As we know also from Africa (and one might add Southeast Asia), relative height systems easily derive historically from [±ATR]. Moreover, the four pairs of Tungusic would match with Chukotian with its extra neutral vowel with underlyingly high or low vowels and its three other pairs, and likewise Old and Middle Korean with three pairs and a neutral vowel i.

However, as usual in historical linguistics, difficulties arise. Poppe (1960) and others in reconstructing Proto-Altaic equate the front vowels of Turkic and Mongolian with the +ATR vowels of Tungusic, and the back vowels with -ATR. I believe, given also the evidence of Korean and other Eurasiatic languages that the [±ATR] system is original and the back-front contrast of Turkic and Mongolian are secondary. Whichever is correct, however, the i ~ e alternation discussed in this paper would have to derive from the higher [front, +ATR] member of two different pairs and would therefore have the same rather than different harmonic features. The present paper is, however, merely preliminary and calls for much further work in a very difficult area of investigation.

What I hope to have accomplished in the present study is to show that the Indo-European e:o (i.e. e:a) Ablaut is very old and is part of a larger system of alternations which has correspondences in specific forms in a number of other branches of Eurasiatic. In particular the i ~ e alternation is investigated especially in regard to the interrogative kwi-

and the near demonstrative and anaphoric i-. In addition a theory is presented in regard to the Indo-European fossilized suffix -ne of kwe-ne, an indefinite and generalizing pronoun, namely that -ne ~ na was originally a singular absolutive or nominative restricted to the interrogative and/or possibly the demonstrative in Proto-Eurasiatic. Moreover the irregular distribution over languages and even dialects of the same language and the pairing of the vowels in a cross-height harmony system can be shown to be typical outcomes of the breakdown of such systems. This is particularly well exemplified by Nivkh.

That the Indo-European e:o Ablaut is a remnant of a former vowel harmony system was already proposed by Kravchuk (1969) but he gives no indication of the general nature of such a system or any evidence to support it.

Finally we may raise the question as to whether there might not be actual survivals within Indo-European of the vowel harmonic system proposed here. There are two instances in which this could be suggested. One is in the Hittite general indefinite pronoun in which a nominative kuis-ki "who?" contrasts with genitive kuel-ka, ablative kuets-ka. This is considered to be a vowel harmonic alternation by Kronasser (1956:48) and it would of course conform to the system proposed here. However, variant writings such as kuis-ku and kuis-ka suggest the possibility that the nominative is really kuis-k (cf. Lydian qis-k). Another possible example is the contrast of the Indo-

European reduplicative vowel i in the present stem in contrast to e in the perfect. No satisfactory theory has, to my knowledge, been proposed. Here given the present stem vowel e and the perfect o, we have full agreement with the vowel harmonic system proposed in this paper.

The tentative nature of some of the proposals has been stressed in the course of this study. I should add that the validity of Eurasiatic as a linguistic stock does not depend on these hypotheses either. There is a mass of lexical and also additional grammatical evidence that will be presented. However, the striking agreement in particular in the interrogative kin ~ ken in Indo-European, Uralic, Yukaghir, Mongolian, Nivkh, Eskimo and Aleut is a powerful piece of evidence for the common affiliation of the languages that have it.

Footnotes

1. This article is an expanded version of the Collitz lecture delivered at the Stanford Summer Linguistic Institute on July 28, 1987.

2. For a fuller account see Greenberg 1987, Chapter 1.

3. The subjects of Greenberg (to appear (a)) are first, the

Eurasiatic cognates of Indo-European eg^{h}om "I", especially Chukchee eɣəm iɣəm "I" cf. eɣət iɣət "thou" in the same language, and secondly, the Indo-European third person plural and impersonal -r and the historical development of cognate forms in other branches of Eurasiatic. The topic of Greenberg (to appear (b)) is the interpretation of Indo-European i-(os) as an original interrogative rather than relative or demonstrative and the consequences for PIE word order to be deduced from the absence of a relative pronoun.

4. There have been posited in addition such sequences as *rr̥, *ll̥ etc. which actually appear as sequences of some short vowel plus r, l etc. according to the language. An attempt was made to account for these, by the so-called Sievers-Edgerton law, as occurring when there was a preceding heavy syllable. I do not consider this question here, except to express my opinion that these cases, in which the initial component of the sequences was interpreted as schwa secundum by Güntert and Hirt, are a separate problem from the "reduced grades" such as i of e and u of o discussed here.

5. However, in a more recent treatment of Kamchadal, Volodin (1976:216) describes a similar auxiliary verb el. The final consonant is an unvoiced lateral fricative. There is a dialect difference here insofar as Bogoras' description is based on the Khair'uz dialect and Volodin on Napon which are numbers of the two different dialects of Kamchadal. Moreover, Bogoras does not

specify any unvoiced lateral in his description. It is likely that the two forms have a single origin in *es~is but this is a tentative conclusion. Bogoras mentions numerous alternations between laterals and sibilants in his description.

6. Outside of the well-known instances of e~i and u~o alternation in Greek found in Güntert, Mel'nichuk and other sources, two other instances are worthy of mention. In both instances etymologies which are quite obvious on semantic grounds are not even mentioned because they contain the forbidden alternation. In each case the Liddell and Scott lexicon of 1897 contains the etymology while they are simply passed over in silence in the later revised edition supervised by Jones and Mackenzie who knew that Indo-Europeanists rejected this alternation.

One of these is lébḗs "kettle, cauldron" which in the earlier edition is derived from leibein "pour, pour forth." The verb has no tense form in oi and there are a number of examples of i- grade e.g. líbas "spring, fountain", líps (idem), líbadion "a small stream", líbos "a drop of blood". The only example of oi is loibḗ "libation" in a category, the verbal noun, in which o grade is very productive in Greek. Frisk derives lébēs from the same root as that of lebērís "sloughed off skin of a snake"; Bailly in his dictionary gives no etymology while Chantraine notes that Frisk's is hardly satisfactory from a semantic point of view. He thinks it may be a borrowed word. In fact Hebrew

keleb has been mentioned as a source but Chantraine concludes with the statement that there is no acceptable etymology. Saussure (1879:135) cites a rare form líbei "he pours" whose source I have been unable to find.

The other example is tokson "bow". Here Liddell and Scott (1897) derive it from the verb tuŋkhánō (stem tukh-as in the second aorist étukh-on) whose primary meaning is given as "to hit", especially "to hit the mark with an arrow." This same etymology was already given by Curtius in 1858 before the modern doctrine of PIE vowel alternation had been established. There are no forms in toukh- while there is the noun túkhē "good fortune". Moreover there are Aeolian forms in Pindar like the participle tóssais and even epétosse with exactly the same meaning as Attic epétukhe "fall in with, meet with". These Pindaric forms remain completely unexplained.

An attempt to explain tókson as from the root found in téktōn = Sanskrit takšan has been abandoned. One would expect Greek kt and not ks <*kƀ. Schwyzer accepts a suggestion of Benveniste that it is borrowed from Scythian and Chantraine maintains this even though he is aware that it is now known to occur in Mycenean.

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RECONSTRUCTIONS

THE NOSTRATIC RECONSTRUCTIONS OF V. ILLICH-SVITYCH

Translated and Arranged by Mark Kaiser

What follows is a translation of the headings from the first two volumes of Illich-Svitych's Nostratic Dictionary and Part I of the third volume (all that has been published to date). This is only part of an ongoing translation of the entire dictionary; specifically, his citations from individual languages, his explanations of apparent incongruities, and his tables of phonetic correspondences have not been provided. This is intended only as a guide for non-Russian speakers until such time when a translation of the entire Dictionary is published. It would be grossly unfair to Illich-Svitych and his enormous contribution to historical linguistics to base a critique of his work on this translation alone.

The entries are listed in alphabetical order. The numbers refer to the Dictionary entry: #1-245 can be found in Illich-Svitych 1971, #246-353 in Illich-Svitych 1976, and #354-378 in Illich-Svitych 1984.

* * *

1. ? baHli 'wound, pain': IE. bheh$_2$l- 'id' ~ Alt. [bāli 'wound'].
2. baHʌ 'to tie to': Kart. b- 'tie to, hang' ~ Alt. bā- 'tie to'.
3. baq̓a 'to look': AA. bq- 'id' ~ Alt. baka- 'id'.

4. balʕ/u/ 'to swallow': AA. blʕ 'swallow' ~ Alt. balgu-/bilga- 'swallow, throat'.

5. balqa 'to flash, sparkle': AA. brq 'flash, lightning' ~ Kart. berçq- 'flash, sparkle' ~ IE. bhelg-/bhleg- 'flash, sparkle' ~ Alt. [balkʌ- 'shine, sparkle'].

6. ? balʌ 'blind': AA. bll 'id' ~ Alt. balʌ 'id'.

7. bara 'big, good': IE. bher- 'good, big' ~ Ural. para 'good' ~ Drav. [par- 'big'] ~ Alt. [bara 'many/much'].

8. bari 'to take': AA. br- 'grab, catch' ~ IE. bher- 'take, bring, carry' ~ ? Drav. per̲- 'pick up, gather' ~ Alt. bari- 'take into hands'.

9. berg/i/ 'high': AA. brg 'id' ~ ? Kart. brg̲-e 'id' ~ IE. bherǵh-/bhreǵh- 'id' ~ Ural. [p/e/r/-kʌ/ 'id' ~ ? Drav. pēr̲ 'id'.

10. ? be/rH/u 'to give': AA. [br/H/ 'id'] ~ Alt. [bērü- 'id'].

11. (Descriptive) biča 'small': Ural. [pić ʌ 'id'] ~ Drav. pīc-/picc- 'small, short' ~ Alt. biča 'small'.

12. biǰʌ 'to break': AA. bs̲-/bd̲- 'break, smash, press' ~ Kart. biǰ- 'break, crumble' ~ IE. peis- 'smash, crush, press' ~ Drav. pīc- 'smash, shell, knead'.

13. bilwi 'cloud': AA. bjl 'heavenly waters, cloud' ~ Ural. pilwe 'cloud' ~ Alt. [buli-t 'cloud'].

14. (Descriptive) bil´ʌ 'to scream': Kart. bir- 'sing' ~ IE. bhel- 'talk, roar' ~ Drav. pi̲ʌ- 'scream'.

15. bok/a/ 'to flee': IE. bheug-/bhegʷ- 'id' ~ Ural. pok-ta-, poke- 'id'.

16. bolʔi 'to grow (of plants)': AA. ʔbl 'leaf, growing plant' ~ IE. bhelh´-/bhleh´- 'a plant, leaf, flower' ~ Drav. [poli- 'grow, bloom'].

17. (Descriptive) bongä 'fat, swell': IE. bhenǵh- 'fat, thick' ~ Ural. puŋka/poŋka 'fat, swelling' ~ Drav. poṅk- 'swell, boil over' ~ ? Alt. [boŋʌ 'fat, big'].

18. bor´a 'brown, grey-brown': IE. bher-, bhe-bhru-, bhreu- 'brown' ~ Alt. bor´a 'grey, brown'.

19. buHi 'to grow up, arise': IE. bheuH- 'grow up, become, be' ~ Ural. puγe 'tree' ~ Alt. büi 'be'.

20. bulʌ 'precipitation, mud': AA. b(w)l 'moist, dampen; mix' ~ ? IE. bhl-endh- 'turbid; mix' ~ Alt. bulʌ 'mud, stir up, mix'.

21. bura 'to bore': AA. b(w)r 'bore, dig; opening' ~ ? Kart. [br(u)- 'turn'] ~ IE. bher- 'bore, dig, prick' ~ Ural. pura 'instrument for boring; bore, hollow, dig' ~ ? Drav. pōr̲ 'opening' ~ Alt. [bura- 'turn, bore'].

22. bur(H)ʌ/bor(H)ʌ 'porous soil, dust': AA. b(w)r/b(w)rH 'porous soil, soil, sand, dust' ~ ? Kart. burγw- 'dust' ~ Ural. porʌ 'dust, sand, dirt' ~ Drav. pūr̤ʌ/por̤ʌ 'porous soil, sand, dust' ~ Alt. bōr, b/ū/r 'porous soil, limestone, dust'.

23. burʌ 'snow (sand) storm': ? AA. bwr- '(sand)storm, wind' ~ IE. bher- 'storm, seethe' ~ Ural. purʌ- 'whirl (of snow)', purkʌ 'blizzard' ~ Alt. burʌ/bora 'storm, blizzard'.

24. (Descriptive) bur´a 'to boil, bubble up': ? AA. br- 'boil' ~ IE. bhreu- 'boil, bubble up' ~ Ural. pura-/porʌ 'boil, gurgle' ~ Drav. [pur̤- 'boil'].

25. büḵa 'to bend, bent': IE. bheug-/bheugh- 'bend' ~ Alt. bökä-/ bükä- 'bend, bent'.

26. büri 'to cover': Kart. bur- 'cover, darken' ~ Drav. pūr̤- 'cover, bury' ~ Alt. büri- 'cover'.

27. ? -bʌ, suffix in the names of wild animals: AA. [-b/-ab, 'id'] ~ IE. -bh-, 'id'.

28. bʌǥʌ 'sufficient, excessive': AA. bǵ 'be excessive' ~ Kart. beγ- 'be sufficient'.

29. bʌl´Hʌ 'to blow, inflate': Kart. bēr-/bēl- 'blow, inflate' ~ IE. bhelh´-/bhleh´- 'blow, swell'.

30. bʌnţʌ 'to tie, bind': AA. bnţ 'tie, wrap' ~ IE. bhendh- 'tie'.

31. bʌrKʌ 'knee': AA. brk 'id' ~ Kart. [bg̰-l̰- 'id'].

32. bʌrʌ 'child': AA. br- 'child' ~ ? Kart. [ber- 'id'] ~ IE. bher- 'id'.

33. calu 'split, cut': AA. sl- 'split, cut, point' ~ Kart. cel- 'mow, cut' ~ IE. (s)kel- 'split' ~ Ural. sale- 'cut, split' ~ Drav. cal- 'split, cut' ~ Alt. čalu- 'cut'.

34. cujḫa 'thorn': Kart. cxw- 'thorn, point' ~ IE. skʷei(H)- 'thorn' ~ ? Drav. cī- 'thorn' ~ Alt. čüjä 'thorn, point'.

35. (Descriptive) curʌ/corʌ 'drip': Kart. cwar-/cur- 'drip, drop' ~ ? Ural. ćorʌ- 'drip, flow' ~ Drav. cōr-/cUr- 'drip, flow' ~ Alt. čur(ʌ)- 'drip, flow'.

36. ? cʌtʌ 'to cover': AA. [str/štr 'cover (clothe), protect'] ~ IE. (s)k´ed- 'cover (clothe)'.

37. çäjḫa 'glimmer, twinkle': AA. ṣ(j)ḫ 'light, bright' ~ IE. sk´eih- 'glimmer, shine weakly; shadow' ~ Ural. śäjä 'glimmer, shine' ~ Drav. [cāj 'lustre, shine'].

38. ? çʌwʌ 'scream, talk': AA. ṣw- 'scream' ~ Kart. [çw- 'say'].

39. Cali 'to tie around, tie to': Ural. śolme 'knot' ~ Alt. čali- 'tie around, to hook'.

40. ? Curʌ 'herd (wild animals)': AA. s(w)r/ṣwr 'id' ~ Ural. śurʌ 'herd of deer'.

41. (Descriptive) ćaṗa 'beat, chop': AA. [sP- 'beat, hit'] ~ IE. skep- 'split' ~ Ural. ćappa- 'chop, beat' ~ Drav. [cava- 'chop'] ~ Alt. čap(a)- 'beat, chop'.

42. ćinʌ 'know': AA. s(j)n 'id' ~ Kart. $c_1$an-/c_1n- 'id'.

43. ćuHʌ 'look': Kart. $c_1$ew-/$c_1$aw-/c_1w- 'look after, guard' ~ IE. (s)keuH- 'look' ~ Drav. cū-(r)- 'look'.

44. ç̌elʌ 'jump': ? AA. ṣl- 'jump' ~ IE. (s)k´el- 'jump' ~ Ural. ćelʌ- 'jump' ~ ? Drav. [cEl-ai 'source, waterfall'] ~ Alt. [č/e/lʌ- 'limp, stumble'].

45. -ća, adjectival and diminutive formant: IE. -i-sk-, adjectival and diminutive suffix ~ Ural. -ca/-cä, adjectival and diminutive suffix ~ Alt. -ča/-čä, diminutive suffix.

46. (Descriptive) ćaḳʌ 'tickle': Ural. ćik(k)ʌ- 'id' ~ Drav. cakk-/cank- 'id' ~ ? Alt. [čik-/čakʌ- 'id'].

47. ćarʌ 'hardened crust': IE. sker- '(ice) crust, scab' ~ Ural. ćarʌ '(hardened) film' ~ Drav. carʌ- 'rough' ~ Alt. čar(ʌ) 'hardened crust'.

48. -Ći, formant of frequentive and iterative verbs: IE. -sk′-, suffix of iterative/intensive forms of the verb ~ Ural. -će-, suffix of frequentive verbs ~ Alt. -ǰi-, suffix of intensive-iterative verbs.

49. Ćimpa 'curved, bent': IE. (s)Kemb- 'curved' ~ Ural. ćimpa 'bent, curved'.

50. ǰiru 'pus, slush': AA. t̲(j)r 'moist, faeces' ~ IE. (s)ter- 'slush, pus, faeces' ~ Alt. ǰirü- 'rot, decay'.

51. ǰüngʌ 'smell, odor': AA. t̲(w)n/t̲(j)n 'smell' ~ Ural. ǰüŋʌ 'smell, odor, smoke'.

52. ? ç̌Adʌ 'to beat': Kart. ç̌ēd-/ç̌ād- 'to nail, forge' ~ Drav. caṭṭ- 'beat, destroy'.

53. ç̌Arʌ 'to cut': AA. ṯr- 'cut, split; sharp stone' ~ Kart. ç̌er-/ç̌ar- 'cut, chop' ~ Drav. car- 'tear apart, split apart'.

54. ? ç̌ämʌ 'astringent': AA. ṣm- 'bitter, astringent, sour', sm- 'bitter, poison' ~ Ural. ǰämʌ 'sour'.

55. (Descriptive) ç̌iķʌ 'to cut': Kart. ç̌eç̌ķ- 'cut (finely)' ~ Alt. [ǰikʌ- 'cut, chop'].

56. ç̌irʌ 'look after, guard': AA. t̲r-/ṣr- 'look, guard, take care of' ~ Kart. ç̌ir- 'care, need' ~ IE. ster-g-, ster-k- 'guard, love'.

57. ç̌ʌʕmʌ 'eat': AA. (?) ṯʕm 'id'/ṭʕm 'to taste' ~ Kart. ç̌ām-/ç̌ēm- 'eat'.

58. ǰalHa 'wide': IE. stelh- 'wide' ~ Alt. [ǰāl(a) 'wide, expansive'].

59. da, locative particle: AA. d, particle with locative meaning ~ Kart. da (with pronouns), -d/ad (with nouns), suffix of directive/adverbial case ~ IE. -D/-eD, suffix of ablative case (pronominal and o-stems) ~ Ural. -ðä/-ðä, suffix of ablative (pronominal and adverbial stems) ~ Drav. -ṭṯu/-tt(ʌ), postpositional particle with locative-ablative meaning ~ Alt. -da/-dä, -du/-dü, formant of locative cases.

60. daHʌ, intensifying and conjoining particle: AA. d(H) 'and, also' ~ Kart. da 'and' ~ Alt. dā 'also, but, and'.

61. daķa 'nearby': AA. dķ 'nearby' ~ Ural. taka 'back, rear', taka-na 'from behind' ~ Alt. daka-/daga- 'close, approach, follow'.

62. dalq/u/ 'a wave': AA. dlx 'upset, stir up' ~ ? IE. [dhelH- with suffix 'sea'] ~ Drav. talla- 'upset' ~ Alt. d/ā/lu-/dōli- 'wave'.

63. danga 'to cover': AA. dm- 'cover, close, press' ~ IE. dhengh- 'cover, press' ~ Ural. taŋa-/taŋe- 'cover'.

64. dEwHi 'shake, blow': IE. dheuH- 'shake, blow' ~ Alt. dEbi- 'wave, blow'.

65. -di, suffix of past tense forms: Kart. -di, suffix of imperfect ~ Drav. -tt-/-t-, suffix of preterit ~ Alt. -di, suffix of preterit.

66. ? (Descriptive) didʌ 'big': AA. d(j)d 'big, fat' ~ Kart. did- 'big'.

67. diga 'fish': AA. [d(j)g 'id'] ~ IE. dhǵh-u-H 'id' ~ Alt. [/d/iga- 'id'].

68. dila 'sunlight': ? Kart. [dila 'morning'] ~ IE. dhel- 'sun, bright, light' ~ Alt. dila 'sun, solar year'.

69. diqʌ 'soil': Kart. diqa 'soil, clay' ~ IE. dhǵhem- 'soil'.

70. dIga 'bright, light': Kart. (s_1a-)dɣ-e 'day' ~ IE. dheih-/dhi̯eh- 'see'.

71. duli 'fire': Ural. tule 'fire' ~ Drav. tuɻʌ- 'shine, to spark' ~ Alt. duli- 'warm up, warm'.

72. duλʌ 'tip, extremity': Kart. dud- 'tip, extremity' ~ Ural. tuδ́ka 'tip, top' ~ Drav. tutʌ 'extremity, tip'.

73. dünga 'be peaceful, silent': AA. d(w)m 'be peaceful, silent' ~ Kart. [dum- 'be silent'] ~ Alt. düŋä- 'sit quietly, be silent'.

74. ? dUrʌ 'deaf': AA. d(w)r 'id' ~ Kart. [dura- 'id'].

75. dʌʔʌ 'lay': AA. dʔ 'lay' ~ Kart. d- 'lay' ~ IE. dheh́- 'lay, stand'.

76. dʌwʌ 'be ill, die': AA. dw- 'be ill, die' ~ IE. dheu- 'die, lose consciousness'.

77. ga(Hʌ) 'take, receive': Kart. g- 'acquire' ~ Alt. ga- 'take, receive'.

78. gara 'thorny branch, thorn': IE. gher-, gherh́-/ghreh́- 'thorn, point, branch' ~ Ural. kara 'thorn, branch, conifer' ~ Drav. kar(a)- 'thorn, point' ~ Alt. gara 'point, branch, conifer'.

79. gändu 'male': Drav. kaṇṭ- 'id' ~ Alt. gändü 'id'.

80. gäṭi 'hand, arm': IE. ǵhes- 'id' ~ Ural. käte- 'id' ~ Drav. kac- 'id'.

81. ? gedi 'nape of neck': AA. gd 'nape of neck, backside' ~ Alt. gedi 'nape of neck, backside'.

82. gE/hr/a 'dawn': AA. ghr 'sunlight, day' ~ IE. ǵherh′-/ghreh′- 'dawn, shine' ~ Alt. *gEra 'dawn, morning light'.

83. gilʌ 'state of sickness, grief': Kart. gl- 'grief, sorrow' ~ IE. *ǵh/e/l- 'sickness, loss' ~ ? Alt. [gil(a)- 'be ill, be sad'.

84. gi/ɬ/ḫu 'smooth and shiny': AA. [glḫ 'bald'] ~ ? Kart. [glu 'smooth'] ~ IE. ǵhelh$^{u̯}$-/ǵhleh$^{u̯}$- 'shiny, of light color', ghleh$^{u̯}$-dh- 'smooth, shiny' ~ Ural. [kī/ɬ/ʌ 'smooth and shiny'] ~ Alt. gilu-/gila- 'smooth and shiny'.

85. goHjʌ 'sunlight, dawn': IE. g$^{u̯}$heHi- 'light, bright' ~ Ural. kojʌ 'dawn, sun' ~ ? Alt. [*gia- 'dawn'].

86. golHʌ 'heart': Kart. *gwl- 'heart' ~ Alt. gol(ʌ) 'core, middle; river source'.

87. goḅa 'empty': AA. gwP 'empty' ~ ? Kart. kwab- 'cave, hole' ~ IE. geup- 'cavity, hole' ~ Ural. koppa 'empty; skull' ~ Alt. goba-/gobi- 'empty, a hollow'.

88. ? ġOʕrʌ 'to search': AA. g(w)ʕr 'id' ~ Kart. [g/ō/r- 'id'].

89. gu/nH/i 'think': Kart. gwăn-/gōn- 'think, recall' ~ Alt. gūni- 'think, be sad'.

90. gurHa 'antelope, male antelope': AA. g(w)rH 'antelope, male antelope' ~ Drav. kūr- 'antelope, deer' ~ Alt. [gūra 'male antelope'].

91. (Descriptive) gurʌ 'swallow': AA. g(w)r- 'swallow, throat' ~ ? IE. g$^{u̯}$erh$^{u̯}$- 'swallow' ~ Ural. kurkʌ 'throat' ~ Drav. kurʌ- 'throat'.

92. güpA 'to bend': AA. g(w)b/k(w)P 'bend, protrubence' ~ IE. gheub- 'bend, curved, crooked' ~ Alt. gübä-/göbä- 'bent, bulging'.

93. gUjRä 'wild (beast)': IE. *ǵhu̯ēr- '(wild) beast' ~ Alt. [görä 'wild'].

94. gŪl´ʌ 'round, sphere': AA. g(w)l 'round, sphere, head' ~ Kart. gwar-/gur- 'round, to roll' ~ ? IE. ghel- 'round outgrowth, head'.

95. gŪrʌ 'hot coals': AA. g(w)r 'fire, coal' ~ IE. g̑her- 'burn, hot, hot coals' ~ ? Alt. gur(ʌ)- 'hot coals, catch fire'.

96. ? ɡalpa 'weak, feeble': IE. help- 'weak' ~ ? Kart. [ɣalp- 'weak' ~ Alt. [alba- 'to be unable'].

97. ? ɡarķu 'bend': Kart. ɣrek(w)- 'bend; twist' ~ IE. herk̑- 'bent, flexible'.

98. ɡuru 'flow, pour': AA. [ġwr 'deep water'] ~ Kart. [ɣwar-/ɣwer- 'pour, flood'] ~ Drav. ūr- 'melt, fuse' ~ Alt. ūRu- 'flow'.

99. ɡʌmʌ 'darkness, night': AA. [ġm 'dark'] ~ Kart. ɣam-(e) 'night'.

100. hawʌ 'desire passionately': AA. hw(j) 'id' ~ IE. heu̯- 'id' ~ Drav. [āv- 'id'].

101. ḫaju 'to live, life force': AA. ḫjw 'live' ~ IE. heiu̯ 'life force' ~ ? Alt. öjü 'alive, life'.

102. ? Ha 'become, be': Drav. ā- 'become, be' ~ Alt. [ā- 'be'].

103. Haja 'pursue, chase': IE. [Hei- 'pursue, cause evil'] ~ Ural. aja- 'chase, pursue, flee' ~ Alt. aja- 'hunt, bag game'.

104. Halʌ 'forward edge': Ural. alʌ-, alka- 'beginning, forward edge' ~ Alt. āl- 'front'.

105. Hanga 'gape': Ural. aŋa/ōŋe 'mouth, opening; to open' ~ Drav. aṅk(a) 'gape' ~ Alt. aŋa 'gape, opened'.

106. Henka 'to burn': IE. Heng- 'burn' (Hŋg-n-i- 'fire' etc.) ~ Ural. eŋkʌ- 'burn'.

107. Herä 'to collapse': IE. h´er- 'collapse' ~ Ural. erä- 'collapse; part, portion' ~ Drav. ir̲(a)-/er̲- 'break apart' ~ ? Alt. [ärü- 'disintegrate, dissolve, melt'.

108. Herä 'male': Drav. ēr̲ 'male' ~ Alt. ērä 'male, man'.

109. H/i/mi 'suck, swallow': Ural. ime- 'suck' ~ Alt. ämʌ- 'suck, swallow'.

110. ? HEnPʌ 'navel': Kart. m̥p-e 'id' ~ IE. h´enbh-/h´nebh- 'id'.

111. Hi, particle indicating past tense: AA. (H)j, particle indicating past tense ~ Kart. -e/-i, suffix of aorist ~ IE. h´e- particle indicating past tense (augment) ~ Ural. -i-, suffix of past tense ~ Drav. -i-, suffix of past tense.

112. Hir´a 'to drag, pull': Drav. ī̲r̲-/īr- 'id' ~ Alt. ir´a- 'id'.

113. Hoǩi 'point, spike': IE. Hek´- 'point, spike' ~ Alt. oki 'arrow, extremity'.

114. Homsa 'meat': IE. (H)mēms- 'id' ~ Ural. omśa 'id' ~ ? Drav. ūñc- 'id'.

115. ? HonC´a 'end, edge': Ural. ońća 'end, forward edge, front' ~ Alt. [ūč̆(ʌ)- 'tip, point'].

116. Horä 'to rise': IE. hʷer- 'raise, rise, move' ~ ? Drav. ēr̲- 'rise' ~ Alt. or/a/-/örä- 'rise, enter'.

117. ? Hosʌ 'poplar': IE. hʷes- 'id' ~ Ural. ośka 'id'.

118. Huǩa 'eye, see': IE. hʷekʷ-/heuk- 'eye, see' ~ Alt. uka- 'notice, understand'.

119. Huwa 'flow of water': Ural. uwa 'current, flow' ~ Alt. ū(a) 'water, wave'.

120. ? Hütʌ 'rest period': Ural. ütʌ/jütʌ 'evening, night' ~ Alt. üdä 'rest time (day or night)'.

121. ?a, demonstrative pronoun indicating distant object, 'that': AA. /?/a, demon. pronoun ~ Kart. (h)a, demon. pronoun indicating nearby object ~ IE. he-n-, demonstrative particle ~ Ural. a-/o-, demon. pronoun indicating distant object ~ Drav. ā, demon. pronoun indicating distant object ~ ? Alt. [a-/o- 'that'].

122. ?a, formant of verbal constructions: AA. ?-/-?, formant of deverbative nouns ~ Kart. (h)a-/-a, formant of deverbative nouns ~ IE. -o-, suffix of deverbative nouns ~ Drav. -a, suffix of participles and deverbative nouns.

123. ?al´a 'food': AA. ?l 'fat, fatty food' ~ IE. hel- 'feed, breed' ~ Drav. aḻ(a) 'fat, strength' ~ Alt. al´(a)- 'food'.

124. ?amu 'morning, daylight': ? AA. ?mr 'daylight, see' ~ IE. hēm- 'day' ~ Ural. amʌ-/oma- (< *amo-) 'morning'.

125. (Descriptive) ?anqʌ 'breathe': AA. [?nx 'sigh'] ~ IE. henH- 'breathe'.

126. ʔarba 'practice witchcraft': AA. [ʔrb 'be clever, prudent' ~ Ural. arpa- 'practice witchcraft; magical equipment of sorcerer' ~ Alt. [arba- 'practice witchcraft'].

127. ʔaSa 'fire': AA. ʔš̆ 'fire' ~ IE. hes- 'hearth, dry' ~ Alt. [aSa- 'ignite'].

128. ʔäla, particle of catergorical negation: AA. ʔl/lʔ, prohibitive and negative particle ~ ? Kart. [ar(a), particle of categorical negation ~ Ural. äla/ela, 2nd ps. sg. imperative of negative verb ~ Drav. al(a)-, negative verb ~ ? Alt. [ülä-, negative verb].

129. ʔe, negative particle: AA. ʔj, negative and prohibitive particle ~ Ural. e-, negative verb (indicative stem) ~ Drav. -a-/-e-, infix of negative form of verb ~ Alt. e-, negative verb.

130. ʔejʌ 'arrive, come': AA. ʔj 'arrive, come' ~ IE. h´ei- 'go' ~ Drav. ej- 'arrive, approach' ~ Alt. ī- 'arrive, enter'.

131. ʔelA 'live': AA. ʔ(j)l 'exist, be; settlement' ~ Ural. elä- 'live' ~ Drav. il/(ʔ)el 'dwelling, abode' ~ Alt. ēl 'settlement; peaceful life'.

132. ʔesA 'settle a place, be at a place': AA. ʔjš̆/ʔjt̲ 'arrive at a place, be at a place, be' ~ IE. h´es- 'be', h´ĕs 'sit' ~ Ural. eśA 'settle a place; place, site'.

133. ʔEmʌ 'to seize, take': AA. ʔm- 'seize, take' ~ IE. h´em- 'take'.

134. ʔi/(ʔ)ʔe, demonstrative pronoun (indicating nearby object, 'this'): AA. j, demon. pronoun, verbal indicator of 3rd sg. masc. subject ~ Kart. (h)i, demon. pronoun indicating distant object; (h)e, demon. pron. ~ IE. hei-/he-, demon. pron., 3rd sg. pers. pron. ~ Ural. i-/e-, demon. pron. indicating nearby object ~ Drav. i/e, demon. pron. indicating nearby object ~ Alt. i, demon. pron., indicator of 3rd sg. subject; e-, demon. pron. indicating nearby object.

135. ʔili 'deer': AA. [ʔjl 'deer'] ~ IE. h´el-n- 'deer' ~ Drav. ilʌ- 'deer' ~ Alt. ili 'deer, wild goat'.

136. ʔitä 'to eat': AA. t(j)ʔ/ʔjt 'id' ~ IE. h´ed- 'id' ~ Alt. [ida- 'id'].

137. ʕal´ʌ 'cross (a mountain)': AA. ʕl- 'cross a mountain, climb up, summit' ~ ? IE. hel- 'on the other side' ~ Alt. āl´a 'cross a mountain'.

138. (Descriptive) ʕ/e/bU 'breast': AA. ʕb(w) 'breast, bosom' ~ Kart. ub-e 'bosom, breasts' ~ Alt. [/e/bü- 'breast, bosom'].

139. ʕEḴu 'water': AA. ʕq(w) 'water' ~ IE. h´ekʷ- 'water, drink'.

140. ? ʕʌLʌ 'burn (sacrificial offerings)': AA. ʕl 'burn offerings, flame' ~ IE. Hel- 'burn offerings, blaze'.

141. ʕʌʔʌ 'branch': AA. ʕḏ 'tree, branch' ~ IE. H/o/sd-o- 'branch'.

142. ja 'which, who' (interrogative and relative): AA. ja/ʔaj 'which, who' (inter.-relat.) ~ Kart. [ja- 'who'] ~ IE. i̯o- 'which' (relat.) ~ Ural. jo- 'who, some kind of' (relat. and indefinite) ~ Drav. jā- 'which, what' (inter.) ~ Alt. ja 'which' (inter.).

143. jaHU (or joHʌ) 'bandage, girdle': IE. i̯ehʷs- 'belt, girdle' ~ Ural. jōɣʌ 'belt, tourniquet for bandaging' ~ Drav. jā- 'tie up'.

144. ? jamʌ 'water': AA. jam 'water, sea' ~ Ural. [j/a/mʌ- 'sea'] ~ ? Drav. [amm- 'water'].

145. ? jarʌ 'to shine': Drav. ēr-/eri- 'shine, blaze' ~ Alt. jaru- 'shine'.

146. jAnʌ 'talk': AA. jn 'id' ~ Drav. janʌ- 'id'.

147. ? jänTʌ 'stretch, extend, pull tight': Ural. *jäntʌ- 'pull tight', (*jäntʌ-š, *jäntʌ-ŋ, (etc.) 'bowstring, tendon, sinew') ~ Drav. [ēnt- 'extend hands, seize with hands'].

148. jela 'light, bright': Kart. el- 'sparkle, lightning' ~ Ural. jela 'light, bright, clear, day' ~ Drav. el(a)- 'light, bright, shining'.

149. -jE, formant of optative: IE. -i̯-, -i̯eh´-, suffix of optative ~ Alt. -jE-, suffix of optative (volitive).

150. -jʌ, suffix of denominal and deverbative adjectives: AA. -ij, suffix of relative adjectives and participles ~ IE. -i̯o-/-i̯i̯o-, suffix of denominal and deverbative adjectives ~ Ural. -j(ʌ), adjectival suffix, -ja/-jä, suffix of nom. agentis and participles ~ Drav. -i, suffix of indeclineable participle ~ Alt. -i, suffix of deverbative nouns and participles.

151. -jʌ, diminutive-endearing suffix of nouns used in addressing: AA. -(a)j, suffix of endearing and dim. nouns ~ Kart. -ia, diminutive/endearing suffix (chiefly in addressing) ~ Ural. -j, dimin./endearing suffix (often in addressing) ~ Alt. -j, dimin./ endearing suffix (usually in addressing).

152. -j(ʌ), affix of oblique form of plural nouns: AA. -aj, suf of plural nouns (originally oblique form) ~ IE. -i̯, formant of plural (originally with the stem of demonstrative pronoun in oblique case) ~ Ural. -j, affix of the oblique form of plural nouns.

153. ? jʌ-(ś(ʌ)), formant of comparative degree: Kart. -e-(is$_1$) -a-, affix of comparative degree of the type (h)u--e-is$_1$ ~ IE. -i̯es-/-is-, suffix of comp. degree.

154. ? kala 'vessel': AA. kl 'vessel, pot' ~ Drav. kala- 'vesse made of leaves; pot' ~ Alt. [kala- 'cauldron'].

155. kalʌ 'fish': AA. kl- 'fish' ~ Ural. kala 'fish' ~ Alt. [kali-ma 'whale'].

156. kal´ʌ 'strip bark, skin': IE. gol- 'bare, bald' ~ Ural. ka 'film, thin skin; bare, smooth' ~ Drav. kaḷ- 'to strip, skin' ~ Alt. Kal´/i/- 'strip, bark, bare'.

157. kamu 'seize, squeeze': AA. km- 'seize, take, squeeze' ~ ge 'seize, take, squeeze' ~ Ural. kama-lʌ/koma-rʌ (< *kamo-) 'hand ~ Drav. kamʌ- 'seize, take, hold' ~ Alt. kamu- 'seize, take, squeeze'.

158. kanpʌ 'soft outgrowth': AA. knPr 'lip' ~ IE. gemb- 'outgro lip, mushroom' ~ Ural. kampʌ 'mushroom'.

159. (Descriptive) karʌ/kurʌ 'crane': ? AA. [k(w)rk 'id'] ~ IE. gerH- 'id' ~ Ural. karke/kurke 'id' ~ Drav. kor-/kur- 'id' ~ ? [kara-/kura- 'id'].

160. käjwʌ 'chew': IE. ǵieu-/gieu- 'id' ~ Alt. kə̄b/ä/- 'id'.

161. kä/lH/ʌ 'go, wander': ? AA. klh 'wander, step' ~ Ural. kə̄lə 'to ford, wander' ~ Drav. kāl- 'go' ~ Alt. [kälü- 'arrive'].

162. kälU 'female relation': AA. [kl(l) 'daughter(sister)-in-law bride' ~ ? Kart. [kal- 'woman'] ~ IE. ǵl̥ōu̯ 'brother's wife' ~ Ur kälü 'female relation (husband's sister, brother's wife, etc.); sister's husband' ~ Drav. [kal- 'wife of father's brother, aunt' ~ Alt. käli(n) 'wife of younger brother or son, sister's husband

163. kENʌ 'know': AA. k(j)n 'know, recognize' ~ Kart. gen 'under stand, cognize, feel' ~ IE. ǵenh$_1$-/ǵneh$_1$- 'know'.

164. (Descriptive) k/iH/ʌ 'sing': IE. /g/eiH- 'sing, scream' ~ Ural. kīγʌ- 'make the mating call, sing'.

165. ? kirHʌ 'old': IE. ǵerH- 'old, decrepid' ~ Drav. [kir̤(a) 'old'].

166. kiwi 'stone': ? AA. [kw 'stone'] ~ Kart. kw-a 'stone' ~ Ural. kiwe 'stone'.

167. koja 'moth, caterpillar': Ural. koja 'moth' ~ Alt. kuja 'moth, larva of gadfly'.

168. kojHa 'fatty, plump, healthy': IE. gʷeihʷ-/gʷiehʷ- 'be healthy, live' ~ Ural. kōja 'fat, fatty'.

169. ? kojHa 'skin,leather, bark': IE. gʷeiH- 'skin, leather' ~ Ural. koja 'bark, rind, crust'.

170. ? kojw/a/ 'birch': Ural. kojwʌ 'id' ~ Alt. kīb(a) 'id'.

171. ? koλʌ 'to skin, strip': Ural. koδ´ʌ-/kuδ´ʌ- 'to skin, strip, undress' ~ Alt. [koLa- 'to skin'].

172. korʌ 'anger, spiritual pain': AA. k(w)r 'be angry, suffer' ~ Drav. kor̤ʌ- 'be angry' ~ Alt. kōrʌ- 'anger, shame, pain'.

173. ? kOr´i 'lamb, sheep': AA. kr 'lamb, young ram' ~ Drav. kor̤i/ kur̤i 'sheep' ~ Alt. kur´i-/kor´i- 'lamb'.

174. küda 'male relation': Ural. küδü 'wife's husband, husband's or wife's brother' ~ Alt. küdä/kuda (< *küda) 'relationship by marriage, father of son(daughter)-in-law, brother(son)-in-law'.

175. ? küjñA 'to bend at the joints': IE. ǵenu-/ǵneu- 'knee' ~ Ural. küjña-(rä) 'elbow bone, forearm' ~ Drav. kūn 'hump'.

176. kül´ʌ 'freeze, cold': ? Kart. kwer-/kwel- 'to cool' ~ Ural. küLmä 'cold, frost, freeze' ~ Drav. [kuḻʌ- 'cold'] ~ Alt. Köl´(ʌ) 'freeze, frost'.

177. küłä 'lake, small reservoir': AA. kwl 'reservoir, lake, river' ~ Ural. k/ä/łʌ 'lake, river bay' ~ Drav. kUḻa- 'reservoir, pond, lake'.

178. küni 'wife, woman': AA. k(w)n/knw 'one of wives in polygamy, woman' ~ IE. gʷen- 'wife, woman' ~ Alt. küni 'one of wives in polygamy'.

179. kUłʌ 'snake, worm': AA. [kwl 'snake, worm'] ~ ? Kart. gwel- 'snake' ~ Ural. kołʌ 'worm' ~ Alt. [kuli- 'snake, worm'].

180. ? kʌmʌ 'biting insect': AA. km-/qm- 'biting insect (louse, flea, tick)' ~ Alt. [kömi- 'biting insect (louse, ant, beetle)'].

181. ? Kačʌ 'advance with effort' (> 'run, crawl'): Ural. *k/a/če- 'run, crawl' ~ Alt. [Kača- 'crawl'].

182. Kejʌ 'do': Drav. kej- 'id' ~ Alt. Kī- 'id'.

183. ? Koki 'follow, track': Ural. koke- 'look around, notice, find' ~ Alt. [Kogʌ- 'track, follow, pursue'].

184. Kumä 'overturned': Ural. kuma 'id' ~ Alt. Köm(ä)- 'id'.

185. KuPśa 'put out, extinguish, go out': IE. gʷes- 'go out' ~ Ural. kupsa-/kopsa- 'go out'.

186. ? Ku/s/i 'fall': Ural. ku/ś/e- 'fall' ~ Drav. kuc(i)- 'fall, lower'.

187. ? KümTä 'fog': Ural. kümtä 'fog, smoke' ~ Alt. küdä- 'fog'.

188. Küţʌ 'to tie up, bind': Ural. kütke- 'tie, bind' ~ Drav. kutʌ 'tie, tighten'.

189. -ķa, nominal diminutive suffix: Kart. -ķ- (-aķ-, -iķ-), diminutive suffix ~ IE. -k-, diminutive suffix ~ Ural. -kka/-kkä, diminutive suffix ~ Alt. -ka/-kä, diminutive suffix.

190. (Descriptive) ķaba/ķapa 'seize': AA. qb- 'seize, take, bite' ~ Kart. ķb- 'bite' ~ IE. ghabh-/kap- 'seize, take, hold' ~ Ural. kappʌ- 'seize' ~ Drav. ķavv-/kapp- 'seize (with mouth), grab', kava- 'seize' ~ Alt. kˢaba-/kˢapa- 'seize'.

191. ķaćʌ 'man, youth': Kart. ķac$_1$- 'man, husband' ~ Ural. k/a/C´ʌ 'youth, man'.

192. ķadʌ 'to weave, plait (with twigs)': AA. qd- 'form pots; build' ~ Kart. ķed- 'build' ~ IE. ket- '(plaited) structure; vessel' ~ Drav. kaţţ- 'tie, build; plaited structure, vessel'.

193. (Descriptive) ķaHPʌ 'chop, dig': ? AA. kHP 'dig, chop, cut' ~ Kart. ķāp-/ķēp- 'chop, cut' ~ IE. ke(h´)p- 'chop, dig'.

194. ķaƛa 'depart, leave, abandon': ? Kart. [ķel- 'depart, remain'] ~ Ural. kaδ´a- 'abandon' ~ Drav. kaţţ-/kaţa- 'go by, pass, cross over, abandon' ~ Alt. kˢala- 'remain, wait',

195. ķapʌ 'nape of neck, head': AA. qP 'nape of neck, head' ~ Kart. ķep-a 'nape of neck, skull' ~ IE. k/a/p- 'head, skull'.

196. ķäćä 'cut': AA. qs 'cut, beat, break' ~ Kart. [kac$_1$- 'cut, chop'] ~ IE. k′es- 'cut' ~ Ural. käćʌ/keća 'knife, edge, point' ~ ? Drav. kacc- 'bite, sting' ~ Alt. [kᶜäsä- 'cut'].

197. ķärʌ 'tie (tightly)': ? AA. kr 'tie, wrap' ~ Kart. ķar-/ķer- 'tie' ~ IE. k′er- 'tie' ~ Ural. karʌ- 'tie tightly, wrap up' ~ Drav. [kar- 'tie tightly, tighten'] ~ Alt. kᶜärʌ 'tie tightly, tighten'.

198. ķelʌ 'be insufficient': Kart. ķel-/ķal- 'be insufficient, need' ~ Ural. kelke 'be insufficient, be needed'.

199. (Descriptive) ķerjä 'to scream': AA. qr(j) 'scream, call' ~ Kart. ķīr-/ķīl- 'scream' ~ Ural. kerjä- 'ask' ~ Drav. kīr- 'scream, call' ~ Alt. [kᶜĒri- 'call'].

200. ķErdʌ 'breast, heart': Kart. m-ķerd- 'breast' ~ IE. k′erd- 'heart'.

201. ķ/o/, post-positional intensifying and conjoining particle: AA. k(w), conjoining particle ~ Kart. kwe, intensifying and affirming particle ~ IE. kʷe, conjoining and intensifying particle ~ Ural. -ka/-kä, intensifying and conjoining particle ~ Alt. -ka, intensifying particle.

202. ķol′ʌ 'round': AA. q(w)l 'round, rotate' ~ Kart. ķwer-/ķwal- 'round' ~ IE. kʷel- 'round, rotate' ~ ? Ural. kol′a 'circle' ~ Alt. Kol′ʌ- 'mix, revolve, turn'.

203. ķudi 'tail': Kart. ķwad-/ķud- 'id' ~ Alt. kᶜudi-rga 'id'.

204. ķuƛa 'secret, to steal': AA. [q(w)l 'steal, deceive'] ~ ? Kart. [ķwel- 'hide, cover'] ~ Drav. kuṯṯ- 'secret' ~ Alt. kᶜula-/kᶜola- 'steal, lie'.

205. ķUṭʌ 'small': AA. q(w)ṭ/k(w)ṭ/kt 'id' ~ Kart. ķuṭ-/ķoṭ- 'id' ~ Drav. kuḍḍ- 'id'.

206. ? ķʌrpʌ 'gather fruit': Kart. ķerb-/ķreb- 'gather', ķrep- 'gather fruit' ~ IE. Kerp- 'gather fruit'.

207. Ķa, particle inciting to action (with verbal forms): IE. -ke, particle inciting to action ~ Ural. -k, -k(k)ʌ, suffix of imperative and optative (originally a particle) ~ Drav. -k(k)ʌ, suffix of optative-imperative (originally a particle) ~ Alt. -kʌ, suffix of imperative.

208. Ķajla 'hot, burn': AA. [ql- 'burn, fry'] ~ IE. k′el- 'hot; cold' ~ Drav. kāḻ- 'burn' ~ Alt. kᶜiala- 'hot, burn, kindle'.

209. Ɋajwʌ 'dig': IE. *keiu̯-/k'eu- (< *k'i̯eu-) 'hole' ~ Ural. kajwa-/kojwa- 'dig, draw (ladle), throw'.

210. ɊaLi 'raise, rise': AA. ql- 'rise, raise, summit' ~ IE. kelH- 'rise, raise; mountain, hill' ~ Alt. kᶜali- 'rise'.

211. Ɋanʌ 'give birth to, be born': AA. qn- 'give birth to' ~ IE. ken- 'be born, young' ~ Drav. kan- 'give birth to'.

212. Ɋapa 'to cover, close': AA. kp-/qp- 'cover, close' ~ Drav. kapp-/kavʌ- 'cover' ~ Alt. kᶜapa- 'close'.

213. Ɋar/ä/ 'black, dark colored': IE. ker-, ker-s- 'black, dark' ~ Drav. kar/kār/kār̤ 'black, dark' ~ Alt. Karä 'black'.

214. Ɋarb/i/ 'abdomen, viscera': AA. qrb 'viscera, abdomen' ~ IE. (Ɋerp-)/Krep- 'abdomen, body' ~ Drav. karʌ- 'fetus, womb' ~ Alt. kᶜarbi- 'abdomen, belly fat'.

215. Ɋarʌ 'burn, to fire': AA. qr(r) 'burn, to fire' ~ IE. ker- 'burn, fry, fire' ~ Drav. kar(ʌ)- 'to fire, be scorched, burn'.

216. Ɋarʌ 'cliff, steep elevation': AA. qr 'cliff, mountain, hill' ~ IE. ker- 'cliff, stone' ~ Drav. kar(a)- 'bank, edge'.

217. Ɋar'ä 'bark, crust, rind': AA. qr(m) 'bark, rind, crust' ~ IE. ker- 'bark, skin' ~ Ural. kōre/kere 'bark, crust' ~ Alt. kᶜE/r'ä// Kār' 'bark, crust'.

218. Ɋaš̯ʌ 'scrape, scratch': AA. [qś- 'scrape, fleece'] ~ IE. kes- 'scratch' ~ Drav. kaᵡᵡ- 'rash, itch'.

219. ɊaSʌ 'bone': AA. qᵡ 'bone' ~ IE. Kos-t- 'bone, rib'.

220. Ɋawingʌ 'armpit, underarm': Ural. kajna-la 'id' ~ Drav. kavuṅkʌ 'id' ~ Alt. kᶜawini 'id'.

221. Ɋä/lH/ä 'tongue': Ural. kēle 'tongue' ~ Alt. kᶜǟla- 'tongue, talk'.

222. Ɋäpä 'paw': AA. qp/kp/qb 'foot, sole, hoof; palm' ~ IE. k'epH- 'hoof, paw' ~ Ural. käppä 'paw'.

223. Ɋe 'who': Ural. ke- 'who' (stem of oblique case ?) ~ Alt. kᶜe- 'who'.

224. ɊEᵡČa 'summer heat': AA. q(j)ṯ 'summer, heat' ~ Ural. kEᵡča 'summer heat, summer'.

225. Ķetʌ 'to fall': IE. (?) Keid-/k′ad- 'fall' ~ Drav. keţʌ- 'fall, collapse'.

226. ĶEñU 'empty, light (weight)': IE. k′en- 'empty' ~ Ural. [kEñʌ- 'light'] ~ Alt. kᶜäńü 'light'.

227. ĶErʌ 'horn': AA. qr- 'id' ~ IE. k′er- 'horn; head, top, summit'.

228. Ķila 'stem, stalk, hair': IE. k′el- '(prickly) stem, stalk' ~ Ural. kalke 'hair, combings, flocks' ~ Drav. [kel 'feather, hair'] ~ Alt. kᶜila 'thick hair'.

229. Ķin/u/ 'be angry, jealous': AA. qn- 'be jealous, angry' ~ Drav. kinʌ- 'be angry' ~ Alt. Kin/u/- 'be angry, jealous'.

230. Ķirʌ 'hoarfrost': AA. qr- 'ice, hoarfrost, cold' ~ IE. k′er- (in derivations) 'hoarfrost, crust (of ice on snow), ice' ~ Ural. kirte, kirʌ 'crust (of ice on snow)' ~ Alt. kᶜir(a) 'hoarfrost, new snow'.

231. (Descriptive) Ķirʌ 'scrape': AA. qr- 'scrape, wound' ~ IE. k′erH- 'destroy, break' ~ Drav. kirʌ-/kerʌ- 'scrape, shave' ~ Alt. kᶜir(a)- 'scrape, to plane, to cut'.

232. Ķo 'who': AA. k(w)/q(w) 'who' (stem of interrogative pronoun) ~ IE. kʷo 'who' (kʷ-i- 'what' and other inter. pronouns) ~ Ural. ko-/ku- 'who' ~ Alt. kᶜa-/kᶜo-, stem of inter. pronoun.

233. Ķoja 'rest': AA. qwj 'remain, wait' ~ IE. kʷei(h′)- 'rest' ~ Ural. koja- 'lie, rest' ~ Drav. kē- 'rest, lie'.

234. Ķorʌ 'gnaw, worm': IE. kʷṛ-mi- 'worm', ? kʷer- 'chew up, break up' ~ Alt. Korʌ 'worm'.

235. Ķulʌ 'to fall, subside': Ural. kulʌ- 'to fall out, fall, wear out' ~ Alt. kᶜulʌ- 'fall, collapse'.

236. Ķurʌ 'plait, tie, bind': IE. kʷer- 'build, make' ~ Ural. kurʌ-/korʌ- 'plait, tack together, fasten' ~ Drav. kurʌ- 'plait, tie, spin' ~ Alt. Kurʌ- 'adjust (to), build, arrange'.

237. ? Ķurʌ 'blood': IE. kreuH- 'coagulated blood, bloody meat' ~ Drav. kuruti 'blood'.

238. ĶüjnA 'wolf, dog': ? AA. k(j)n/k(j)l, k(w)l 'dog, wolf' ~ IE. k′u̯ōn/k′un- 'dog' ~ Ural. küjnä 'wolf'.

239. ɢülä 'community, clan': AA. [q(w)l 'tribe'] ~ IE. kʷel- 'clan, family' ~ Ural. külä 'agricultural community, village; dwelling, house' ~ ? Drav. [kūḻ 'family, crowd'] ~ Alt. [Külä 'house, house servants'].

240. ɢüpä 'boil, swell up': IE. keup-/keuHp- 'boil, evaporate' ~ Alt. kᶜöpä- 'swell up, foam'.

241. ɢUćʌ 'woven basket': ? AA. qwṣ/k(w)s 'woven basket' ~ IE. kʷos- 'woven basket, woven article' ~ Ural. kućа-/koćʌ 'birch basket, birch vessel'.

242. ɢUmʌ 'swallow, devour': AA. q(w)m 'devour, eat' ~ IE. kʷem- 'swallow, gulp down'.

243. ɢU/p/a 'pile, heap': IE. keup-/keub- 'pile' ~ Drav. kupp(a)-/ kuvʌ- 'pile, to pile up'.

244. ɢUrʌ 'short': AA. q(w)r/kr 'short' ~ Drav. kuṟ 'short, small' ~ Alt. kᶜor/u/- 'short, to lessen'.

245. ɢʌ, directive particle: AA. k(//q ?), directive particle ~ Ural. -kkʌ/-kʌ, suffix of lative, a postpositional directive particle ~ Drav. -kkʌ/-kʌ, suffix of dative-lative ~ Alt. -kʌ, postpositional directive particle, suffix of dative-lative.

246. ? -l/a/, suffix of collective nouns: ? Ural. -la, collective suffix ~ Drav. -l, plural suffix ~ Alt. -l(a), collective suffix.

247. (Descriptive) laɢʌ 'lick': AA. lq 'lick' ~ Kart. lōɢ-/laɢ- 'lick' ~ IE. lak- 'lick, lap' ~ Ural. lakka- 'lick, lap' ~ Drav. nakk-/nāk- 'lick'.

248. -lA, suffix of denominative verbs: Ural. -lʌ, 'id' ~ Alt. -lā/-lā̆ 'id'.

249. lAsʌ 'rub, damage': Kart. les- 'rub, damage' ~ IE. les- 'weak, destroyed, bad' ~ Drav. nac- 'wear out; cause disease, weaken'.

250. ? l/e/ṗA 'spleen': AA. lp 'id' ~ Ural. l/e/ppä 'id'.

251. ? lewdä 'search, find': Ural. Lew ä- 'find' ~ Drav. [nēṭ-/nāṭ- 'search for'].

252. lipa 'sticky': AA. lP- 'smear with grease/fat, fat' ~ Kart. lap-/l̥p- 'dirt, clay' ~ IE. leip- 'stick to, sticky, smear with grease/fat' ~ Ural. Lipa- 'slippery, sticky' ~ Drav. nīv- 'smear with grease/fat, stroke' ~ Alt. lipa- 'stick to, sticky, viscous'.

253. -lʌ, adjectival suffix: Kart. -l-/-el-/-il-, suffix of participles and deverbative nouns; -il-/-ol- diminutive suffix ~ IE. -l-, suffix of denominative and deverbative adjectives ~ Ural. -la-/-lä, suffix of adjectives, nouns, and diminutives ~ Alt. -l, suffix of deverbative nouns.

254. (Descriptive) l′ama 'knead, mash, soften': AA. lm 'soft, tender' ~ IE. lem- 'break; weak' ~ Ural. l′ama 'knead, mash, crush; weak' ~ Drav. ñamʌ- 'squeeze, knead, mash, break'.

255. ɬ/a/ʁa 'leg': AA. lq-/lk- 'leg, foot' ~ IE. lek- 'leg' ~ ? Ural. ɬakʌ- 'leg' ~ ? Drav. tāk 'walk'.

256. ɬapa 'flat': ? AA. lP- 'flat, palm' ~ IE. lep- 'palm, paw' ~ Ural. ɬappa/ɬapa 'flat, paw, shoulder blade' ~ Alt. lapʌ- 'flat, leaf'.

257. ɬA, locative particle: AA. l, locative-directive particle ~ ? Kart. -la, locative affix ~ Ural. -ɬa/-ɬä, locative suffix ~ ? Drav. -uɻ, locative suffix ~ Alt. [-lā/-lə̄, locative suffix].

258. ɬejna 'soft, weak': AA. ljn 'soft, weak' ~ IE. lei- 'soft, weak, thin' ~ Ural. lejna 'weak'.

259. ɬiwa 'mud, silt': IE. leu(H) 'mud, silt' ~ Ural. ɬiwa 'mud, sand, bog'.

260. ɬonʁa 'bend': IE lenk- 'bend' ~ Ural. ɬoŋka 'bend, chip off; droop, dangle' ~ Drav. toṅk- 'bend, dangle' ~ Alt. loŋa- 'bend, incline, bow'.

261. ɬükʌ 'pierce, insert': Ural. ɬükkʌ- 'pierce, insert, push' ~ Drav. [tukk- 'insert, push'] ~ Alt. lükä- 'pierce'.

262. Labʌ 'seize, acquire': AA. lb- 'seize, acquire' ~ IE. l/e/bh- 'seize, acquire' ~ Alt. [labʌ- 'drag in one's teeth'].

263. LaHm/u/ 'swamp': ? Kart. [lam- 'silt, dampness'] ~ IE. lehm- 'swamp, puddle' ~ Ural. Lampe 'swamp, small lake' ~ Alt. lāmu 'swamp, sea'.

264. Lamd/i/ 'low, depression': IE. lendh- 'valley, plain' ~ Ural. Lamte 'low, depression'.

265. L/a/ʈʌ 'damp': Kart. lʈw- 'moisten' ~ IE. lat- 'damp, moist soil'.

266. Lawša 'weak, limp': IE. leus- 'id' ~ Ural. Lawša 'id'.

267. L/ä/jʌ 'water, pour': AA. lj 'water' ~ IE. leiH- 'pour' ~ ? Ural. Läjʌ 'liquid, river'.

268. ? Lopʌ 'peeled bark (rind), thin layer of plant material': AA. lp- 'peeled rind' ~ IE. leup-/leub-/lep-, 'peel; peeled bark, leaf' ~ Ural. Lopʌ 'skinned bark, leaf'.

269. Lubʌ 'to thirst': AA. lwb 'thirst' ~ IE. leubh- 'desire passionately'.

270. Luķʌ 'small carnivore': Kart. leķw- 'young of carnivore, puppy' ~ IE. luk´-/lunk´- 'lynx' ~ Ural. LuKʌ 'fox, marten' ~ Alt. loka/ luka 'lynx, fox, dog'.

354. luńge 'snow': Ural. luńe 'snow' ~ Alt. [luŃä 'wet snow'].

271. Lʌga 'lie': Kart. lag-/lg- 'lay, to plant' ~ IE. legh- 'lie, lie down'.

272. ? Lʌḫʌ 'be ill': AA. l/ḫ/ 'ill' ~ Kart. [le/x/- 'be ill'].

273. (Descriptive) Lʌšʌ 'lick': AA. lš- 'lick', liš- 'tongue' ~ Kart. laš- 'lip', ļš-wn- 'lick'.

274. ? ƛa/mH/u 'bird cherry': Ural. ð´ōme 'bird cherry' ~ Alt. /d/imu 'bird cherry, buckthorn'.

275. magu 'bad': AA. mgw/mwg 'id' ~ Alt. [magu 'id'].

355. maHj/e/ 'rock, wave': IE. meh(į)- 'rock, shake; wave, nod', (fig.) 'lure, summon, show' ~ Drav. maya 'sway, reel (physically and emotionally)' ~ Alt. maji 'rock, shake, sway, bend; wave'.

356. maHjʌ- 'lose strength, weaken; disappear, perish': IE. meHi- (> mā(į) or mō(į)-) 'to tire' ~ Drav. mājʌ- 'disappear, perish, be finished, die; destroy, finish' ~ Alt. majʌ- 'weaken, be lost'.

276. majƛʌ 'honey, sweet juice from trees': IE. mel- 'honey' ~ Ural. majð´ʌ 'sweet tree juice' ~ Drav. [maṯṯ-/mitt- 'honey, sweet tree juice' ~ ? Alt. [/m/alʌ 'honey'].

277. majrʌ 'young male': AA. m(j)r 'man, young male animal (cub, whelp, etc.)' ~ IE. mer- (mer-įo-) 'young man' ~ Drav. mār-/mār- 'young male animal' ~ Alt. [miârä- 'to marry'].

278. malʌ 'numerous, abundant': ? AA. ml- 'good' ~ IE. mel- 'numerous, abundant' ~ Drav. mal 'abundant'.

279. ? mana 'stop, detain': AA [mnʕ 'detain, hinder'] ~ Drav. mān- 'stop' ~ Alt. [mana- 'finish, destroy'].

280. manga 'strong': AA. [mʌ(n)g- 'strong, heavy, abundant'] ~ ? Kart. [mag- 'strong'] ~ IE. mengh-/$m_{(e)}$/negh- 'abundant, numerous' ~ Alt. [maŋa 'hard, strong, stable'].

281. manu 'think': AA. mn- 'think, understand, desire, count' ~ IE. men- 'think, recall, mention' ~ Ural. manʌ/monʌ (< *mano-) 'guess, conjure, say' ~ ? Drav. manʌ- 'request, word'.

282. marja 'berry': Kart. mar-ɕqw- 'strawberry' ~ IE. mor- 'blackberry, mulberry' ~ Ural. marja 'berry' ~ ? Alt. [mürʌ 'berry'].

283. marʌ 'tree': Ural. m/a/re 'id' ~ Drav. mara(m) 'id'.

284. mA, formant with nominal function in relative constructions: AA. m- (ma-, mi-)/-m, derivational nominal formant ~ Kart. me-/m-/ma-, derivational nominal prefix ~ IE. -mo, derivational nominal suffix ~ Ural. -ma/-mä, derivational nominal suffix ~ Drav. -mai, derivational nominal suffix ~ Alt. -ma/-mä, derivational nominal suffix.

285. -mA, suffixal formant of the marked direct object: IE. -m, suffix of accusative sg. of animate nouns ~ Ural. -m, suffix of definite object ~ Drav. -m, suffix of marked object ~ Alt. [-ba/-bä, suffix of marked/definite object].

286. mALʌ 'mountain': IE mel- 'mountain, elevation' ~ Drav. mal- 'mountain'.

287. mAnʌ 'remain in place, stand firmly': AA. mn 'remain, be firm' ~ IE. men- 'remain in place' ~ Drav. man- 'remain in place, stand firmly'.

288. mArʌ 'spot, dirty': IE. mer- 'dirty, dark' ~ Drav. mar- 'dark spot'.

289. mä, 1st ps. pl. inclusive pers. pronoun: AA. [m(n), 1st ps. pl. incl.] ~ Kart. m-, marker of object of 1st pl. incl. ~ IE. me-s, 1st pl. ~ Ural. mä-/-me-, 1st pl. ~ Drav. mā, stem of 1st pl. pronoun ~ Alt. bE (oblique mE-n), 1st pl. exclusive (secondary function).

290. mä, prohibitive particle: AA. m(j), prohibitive and negative particle ~ Kart. mā/mō, prohibitive and negative particle ~ IE. mē, prohibitive particle ~ Drav. ma-, stem of prohibitive and negative elements ~ Alt. mä/bä-, prohibitive and negative particle.

291. ? mälgi 'breast, udder': AA mlg 'breast, udder, suck' ~ ?melǵ- 'to milk' ~ Ural. mälγe 'breast, chest cavity'.

292. mänʌ 'man, male': AA. mn- 'male, man, person' ~ IE. m/o/n- 'man' ~ Ural. *mäńće 'man, person' ~ Drav. man̲ 'husband, lord'.

293. m/ä/rʌ 'be ill, die': AA. mr- 'be ill' ~ IE. mer- 'die' ~ Ural. m/e/rʌ 'wound, pain'.

294. mär´ä 'moisture, damp': AA. mr 'damp; rain, reservoir' ~ Kart. *mar-(ei) 'lake, moist soil; cloud' (< 'damp') ~ IE. mor- 'swamp, reservoir' ~ Drav. [mar̈-ai 'rain'] ~ Alt. möRä-/müRä- 'sea, river; water'.

295. ? mene 'step': IE. men- 'trample, step on, crumple' ~ Ural. mene- 'go'.

357. ? menʌ 'to miss, pass by; be futile, in vain; reckless; false': IE. men-t-/mn̥-t- 'be futile, useless; false, to lie' ~ Ural. mentä 'pass by, miss the mark, be mistaken' ~ Alt. mun-u- 'get lost; go insane', men- 'become blunt, dull; become cloudy (consciouness), men-de- 'be shocked, be lost, become confused'.

296. ? mer´ʌ 'fat, smear with grease/fat': AA [mr- 'greasy, smear with grease/fat'] ~ Drav. mer̈ʌ- 'to smear with grease, to coat'.

297. metA 'feel, realize': IE med- 'think over, ponder' ~ Alt. medä- 'feel, know'.

298. mEwʌ 'water, moisture': AA. mw 'water, moisture' ~ IE. meu- 'moist, moisten' ~ Alt. [mõ] 'water'.

299. mi, 1st ps. sg. pers. pronoun 'I' (oblique mi-nʌ): Kart. me/mi 'I' (stem of oblique cases *me-n-) ~ IE. me- 'I' (oblq. stem: gen. me-ne-) ~ Ural. mi 'I' (oblique stem mi-nʌ-) ~ Alt. bi 'I' (oblique stem minʌ-).

300. mi 'what': AA. m(j) 'what, who' ~ Kart. maj 'what' ~ IE. mo-, stem of interrogative adverbs ~ Ural. mi 'what' ~ Alt. [mi- 'what', interrogative particle].

301. miń̈ä 'woman, woman relative': AA. m(j)n 'woman, woman relative' ~ Ural. miń̈ä 'daughter/sister-in-law' ~ Drav. miṇ(ṭ)- 'female, woman; wanton woman'.

302. moLʌ 'smash': AA. [ml- 'smash, break, dismember'] ~ IE. mel- 'smash, grind' ~ Ural. *moL/a/- 'break, break up'.

303. mu, demonstrative pronoun ('this, that'): Kart. m(a)-, demon. stem 'this, he' ~ Ural. mū/mō 'other' ~ Alt. bū (oblique mu-n) 'this'.

304. muçʌ 'wash': AA. m(w)ş 'wash' ~ IE. mesg- 'wash, dive' ~ Ural. muśʌ, muśke- 'wash' ~ Drav. muc(c)- 'wash'.

305. muČʌ 'spoilage, shortage': Ural. muČʌ 'shortage, fault, illness' ~ Drav. mucc- 'spoil; lose consciousness, weaken'.

306. muda 'end': AA. [md 'end'] ~ Drav. mūṭ- 'end' ~ Alt. [muda- 'end'].

358. ? munE 'shortage, defect, deformity': IE. men-d- 'defect, shortage, deformity' ~ Alt. munE 'shortcoming, defect, shortage'.

307. ? muña 'egg': Ural. muña 'egg; testicles' ~ Drav. [muṭṭai 'egg'].

308. mu(n)ķʌ 'heavy, difficult': Kart. maķ-/manķ- 'heavy' ~ Drav. mukk- 'exert oneself' ~ ? Alt. [/m/uŋ-//m/ukʌ- 'torment, suffering'.

309. muri 'twist': AA. mr- 'rotate, twist, turn' ~ Ural. murʌ- 'turn, dislocate' ~ Drav. muri- 'twist, revolve, bend'; muṟʌ 'twist, rotate' ~ Alt. muri- 'turn, twist, bend'.

310. murʌ 'break, smash': AA. m(w)r 'crumble, smash, cut' ~ IE. mer- 'smash, grind, crumble' ~ Ural. mura 'fragile, brittle, fragment' ~ Drav. murʌ/muṟʌ 'break, cut' ~ Alt. [murʌ/morʌ 'fragile, brittle'].

311. ? mUdʌ 'think': AA. m(w)d 'understand, think, say' ~ IE. meudh- 'think, say'.

312. ? mʌṭʌ 'worm': Kart. maṭ-ḷ- 'worm' ~ IE. *mot- 'worm, insect larva'.

313. mʌ/ź/ʌ 'light, bright, sun': AA. mš̌ 'sun, morning, fire' ~ Kart. mz_1-e 'sun'.

314. -n, suffix of oblique form of nouns and pronouns: Kart. -n, suffix of oblique form of nouns and pronouns ~ IE. -(e)n, suffix of oblique form of nouns ~ Ural. -n, suffix of oblique form of nouns and pronouns (> suffix of genitive) ~ Drav. -(i)n, suffix of oblique form of nouns (> suffix of genitive) ~ Alt. -n, suffix of oblique form of nouns and pronouns.

315. nat/o/ 'female relative': Ural. nato 'sister-in-law' ~ Drav. nātt-/natʌ- 'husband's sister, brother's wife'.

316. ne/rH/i 'front of head, forehead': AA. [njr(H) 'forehead'] ~ Ural. nēre 'front of head, cheek, snout' ~ Drav. nerri 'forehead, front'.

317. nimi 'name': IE. nŏ̄m- 'id' ~ Ural. nime 'id'.

318. ńaʕrʌ 'young, newborn': AA. [nʕr 'young, youth'] ~ IE. i̯eh₁r- 'spring, year' ~ Ural. ńōre 'young, newborn, spring' ~ Drav. ñār- 'young plant, geminate' ~ Alt. ńā/r/ʌ- 'young, newborn; spring'.

319. ńamʌ 'squeeze, seize': IE. i̯em- 'hold tightly, bridle' ~ Ural. ńomʌ-/(?)ńamʌ- 'squeeze, seize' ~ Drav. ñamʌ 'squeeze, press'.

320. ńara 'fire, blaze': AA. [nr 'fire, blaze, sparkle'] ~ Drav. ñarʌ- 'fire, blaze' ~ Alt. [NaRa- 'sun'].

321. (Descriptive) ńämʌ 'soft': Ural. ńämʌkʌ/ńimʌkʌ 'id' ~ Alt. ńimʌ/ńämʌ 'id'.

322. ? ńä/wH/a 'hair': Ural. ńāwa 'hair, down' ~ Drav. [navir 'hair'].

323. ? ńäʑʌ 'moist, damp': AA nd- 'moist, ooze out, splash' ~ Ural. ńäćʌ/ńäčʌ 'moist, damp'.

324. ńida 'to tie, bind': IE. nedh- 'tie, bind' ~ Ural. ńiδa- 'tie, tack together, join'.

325. (Descriptive) ńila 'slippery and moist (inner layer of rind, skin)': Ural. ńila 'inner layer of rind' ~ Alt. ńila 'slimy (surface)'.

326. ńohrʌ 'moist, to flow': AA. [nhr 'river, flow'] ~ Ural. ńorʌ/ ńōrʌ 'moist, swamp, to flow' ~ ? Drav. ñīr 'moisture, water' ~ Alt. ńōru 'moist, swamp, get soaked'.

327. ńowda 'move quickly': AA. nwd 'move quickly' ~ IE. i̯eudh- 'move quickly, do battle' ~ Ural. ńowδa- 'pursue, follow'.

328. ? ńükʌ 'shake, pull at': Ural. ńükʌ 'pull at, jerk' ~ Drav. [nuk- 'shake'].

329. ńülʌ- 'tear out, scrape off': Ural. ńülke- 'to skin, tear out hair' ~ ? Drav. nuḻḻ- 'pinch, pinch off, tear off' ~ Alt. *ńüli-/ ńöli- 'strip, tear out, scrape off'.

359. ñajgu- 'bow, bend, hang': IE. kneigʷh- 'bow, bend' ~ Ural. /ñ/ik/u/- (< *ñajgu- ?) 'bow, bend' ~ Alt. ŋajgu- 'bend, hang, droop, rock'.

330. ñiĶa 'neck vertebra, neck': Ural. ñika 'vertebra, joint, neck, nape of neck' ~ Alt. ńika- 'neck vertebra, neck, collar'.

331. NajRʌ 'man, male': IE. ner- 'man, male, male strength' ~ Alt. [niarʌ 'man, person'].

332. NA, demonstrative pronoun: AA. n(j), demon. pron. ~ Kart. -n, marker of 3rd sg. subject ~ IE. ne-/no-, stem of demon. pron. ~ Ural. nʌ-, stem of demon. pron. ~ Drav. nā̆, demon. pronoun.

333. -NA, suffix of plural animate nouns: AA. -ān, suffix of plural animate nouns ~ Kart. -en/-n, suffix of plural nouns (originally animate) in direct case ~ ? Ural. -Nʌ, suffix of plural nouns ~ Alt. -na/-nä, suffix of plural animate nouns.

334. NEgʌ 'stab': AA. ng- 'stab, pierce' ~ IE. neiǵh- 'stab, pierce'.

360. Nuq/ü/ 'bend, rock, lower': AA. nwx 'bend, lower, lay' ~ Kart. nqw 'bring down, overturn' ~ IE. neu̯H- 'bend, bow, rock' ~ ? Drav. [nūkʌ 'bend, bow'] ~ Alt. nugu/nükü̂ 'bend, bow'.

335. Nüqʌ 'now': IE. nuH- 'id' ~ Ural. Nükʌ 'id'.

336. ? palʌ 'swamp': IE. bolH-/pelH- 'id' ~ Alt. [pal- 'id'].

361. pal´qʌ 'foot': Kart. $p_1$erq- (> perq-/berq-) 'leg, foot, step' ~ Ural. p/ä/l´kä 'foot' ~ Alt. /p/al´ka 'leg, foot, step'.

362. p/a/r/ä/ 'nail': AA. p_1r-, p_1r-s- 'nail, finger' ~ Kart. pṛ/c/xa 'nail, claw' ~ ? IE. per-, perst- 'finger' ~ ? Drav. ver-aḷ (< *$p_1$er-aḷ-) 'finger' ~ Alt. para-(ŋa)/pˆärä-(ŋä) (< *parE-(ŋa)) 'thumb'.

363. /p/äsʌ 'root': Kart. pasw- 'root' ~ Drav. [vaca (< *$p_1$aca) 'type of edible root'] ~ Alt. P/ä/sʌ 'trunk, stem; handle'.

337. pelHi 'shake, fear': IE. pelH-/pleH- 'shake, fear' ~ Ural. pele- 'fear' ~ ? Drav. [piṛʌ- 'shake, fear'] ~ Alt. pēli- 'be frightened'.

364. per/e/ 'rind, skin, peel': AA. p_1r- 'rind, skin, peel' ~ Ural. pere 'skin, rind, film' ~ Drav. $p_1$erʌ 'rind, skin, peel'.

365. /p/unčE 'body hair': Kart. [pačw-/ ? poč- (<*pawč- ?) 'body hair'] ~ IE. pus-, pous- '(body) hair, down' ~ Ural. punče 'down, feathers' ~ Drav. $p_1$occu 'hair, down'.

366. /p/u/ñ/a 'hair, fur, feathers': Ural. puna 'hair, fur, feathers' ~ Drav. $p_1\bar{u}ṯa$ 'hair, fur, down, small feathers' ~ Alt. Puńʌ 'hair, fur, feathers'.

338. ? puṟ̈čʌ(ʌ)/pülčʌ(ʌ) 'flea': AA. $p_{(1)}$rgt/brgt/(?)$p_{(1)}$lgt 'flea, mosquito' ~ IE. bhlus-/plus- 'flea' ~ Alt. pürägä/bürägä/(?)pürčä 'flea'.

367. padʌ 'fall': AA. [pdH 'fall, lie down'] ~ IE. ped- 'fall' ~ Drav. paṯʌ 'fall, lower (oneself), sit, lie down'.

368. palǥʌ 'fortified settlement': AA. bl/H/ (<*plǥ ?) 'settlement, dwelling' ~ IE. p_1lH- 'fortified settlement, fortress, city' ~ Ural. *palɣʌ 'settlement, dwelling' ~ Drav. paḷḷi 'settlement, building, temple' ~ Alt. pala ʌ (> Mong. balaɣa- 'city, fortress, building'.

369. paliHma 'palm': IE. $p_1$lmā (< *p_1lHma) 'palm' ~ Ural. p/el′/ŋa 'handful, palm' ~ Alt. pᶜaliŋa 'palm'.

370. /p/alʌ 'tooth': Drav. palʌ 'tooth' ~ Alt. [Palʌ '(molar) tooth'.

339. (Descriptive) pär′/a/ 'tear, break, split': AA. /p/r- 'split, destroy, cut' ~ ? Kart. p_1r-eç-/p_1r-iç- 'tear' ~ IE. (s)per- 'tear, break' ~ Ural. pärä- 'break' (usually derived *pärek 'broken off piece') ~ Drav. paṟi-/pari- 'tear, break, split' ~ Alt. pᶜör′ü/ pᶜür′ü- 'tear, smash, grind'.

371. /p/a/se 'membrum virile': IE. pes-, pes-os, pes-n- 'membrum virile' ~ Ural. p/a/se- 'penis'.

372. p/ä/jlʌ 'fall': AA. pl- 'fall' ~ IE. (s)phōl- 'fall' ~ ? Drav. vēl- (< *$p_1$ajl- ?) 'fly, lower oneself' ~ Alt. PEjle- 'fly, soar; rush downward; fall (leaves)'.

373. /p/eHńa 'to shepherd, defend, take care of': IE. pō-/pī- (< pōi- < *pe/h′/i-) 'to shepherd, defend, protect, take care of' ~ Ural. pīńa (< *pēńa ?) 'to shepherd, defend, maintain, take care of' ~ Drav. pēŋʌ- 'defend, take care of'.

374. pirkʌ 'ask': AA. brk (< *prk ?) 'ask, pray, bless' ~ IE. prek′- 'ask' ~ Alt. pᶜir/u/ 'ask, pray (for, against), bless, damn, inquire of divinity, conjure'.

340. (Descriptive) pisʌ 'splash': Kart. ps- 'urinate' ~ Ural. piSa- 'drip, drizzle' ~ Drav. picʌ- 'drizzle, rain' ~ Alt. pᶜisü-/ pᶜüsü- 'splash'.

375. ƥoǩwe 'cattle': AA. bkr (< ƥǩr) 'large horned cattle, bull' ~ IE. pek̑u '(small) cattle' ~ Alt. p^{c}oke-r 'bull, large horned cattle'.

341. ƥoy̑qa/ƥodqa 'hip': AA. pʌxd/pʌxd̲/xpd (< *pʌdx/pʌd̲x- with metathesis) 'hip' ~ IE. bhe/dh/- 'hip' ~ Ural. poč$_1$ka 'hip, calf, meaty bulge'. Doubtful correspondences in Kart. and Alt.

342. ? P/ä/Hja 'pain': IE. pehi̯- 'cause pain, scold' ~ Alt. [Pöjä 'wound'].

376. ? qamʌ 'seize': AA. xm- 'seize, take, gather', m- 'take' ~ IE. hem-, meH- 'seize, take' ~ Drav. am- 'squeeze'.

343. qoƫi 'ignite, fire': AA. xƫ-/xt- 'ignite, blaze up' ~ IE. Hĕ̆t- 'fire, hearth' ~ ? Drav. [otʌ 'kindle'] ~ Alt. ōti 'spark, fire'.

377. qowe 'opening': AA. xw 'opening, door' ~ Ural. owe- 'door' ~ ? Drav. āv- 'gape, yawn; to open mouth'.

378. qurE 'to love': Kart. qwar- 'love' ~ Drav. kūr̲ʌ 'love, desire' ~ Alt. k^{c}uri 'desire intensely, love'.

344. qurʌ 'edge, tip, cut': AA. qwr 'cut, dig, opening' ~ Kart. qwer 'castrate' ~ Ural. kurʌ 'knife' ~ Drav. [kūr 'sharp'] ~ Alt. [Kur-č̆a 'sharp'].

345. ? qʌ, particle with collective meaning: Kart. [-qe, marker of plural of 2nd/3rd ps. oblique object] ~ ? IE. -kʌ, suffix of collective ~ Ural. -k, suffix of plural (in pronominal markers of 1st and 2nd plural) ~ Drav. -k(k)ʌ, suffix of noun plural.

346. ? rEʕʌ 'daylight': AA. rjʕ 'sun, daylight' ~ Kart. [r/h/- 'to dawn, shine'].

347. Sʌlʌ 'favorable': AA. š̆l- 'favorable, fortunate' ~ IE. selh-/sleh- 'favorable'.

348. šehr´a 'be awake': AA. [š̆hr 'be awake'] ~ IE. se/Hr/- 'guard (vigilantly)' ~ Ural. [/š̆/erʌ- 'be awake'] ~ Alt. Ser´ä- 'be awake, awaken, notice'.

349. (Descriptive) ţaƥa 'beat': AA. ţp$_1$ƥ 'beat, trample, break' ~ IE. tep- 'beat, crush' ~ Ural. tappa- 'beat, trample, kick' ~ Drav. tabb- 'beat' ~ Alt. t^{c}api- beat, hammer', t^{c}äpi- 'beat, kick'.

350. wola 'big': ? AA. w/l/- 'big' ~ IE. u̯el- 'big' ~ Ural. wola 'many, surplus' ~ Drav. val 'big, strong' ~ Alt. ola 'many'.

351. woţa 'get, obtain, overtake': Ural. wotta- 'to bag game, overtake (when hunting)' ~ Drav. ott- 'extract, bring'.

352. zaṗa 'take into one's hands, hold': IE. sep- 'hold, be occupied with something' ~ Alt. ʒ́apa- 'take into one's hands, make, arrange'.

353. ʒ́/a/ñʌ 'fetus, fruit, pregnancy, descendents': AA. ḏn- 'get pregnant, descendants; brother, sister' ~ ? Kart. z_1m-a 'brother' ~ Drav. caṉ-ai 'fetus, pregnancy'.

SYMBOLS and ABBREVIATIONS

A = a or ä
C = c or ç
C′ = ć, ḉ, or ʒ́
Č = č or č̣
E = ä, e, or i
H = undetermined laryngeal or post-velar
I = e or i
K = g, k, ḳ, or g̣
Ḳ = ḳ or g̣
L = l or ɬ in initial position, l, ɬ, or l′ in medial position.
N = n, ń, or ñ
O = o or u
P = p or p̣
R = r or r′
S = s, ś, or š, or z
T = t or ṭ
U = o, u, or ü
ʌ = vowel of indeterminable quality

Slanted brackets / / around phoneme(s) indicate that those phoneme(s) are the best, but not the only possible reconstruction. See #4.

Round brackets ( ) indicate optional phoneme(s). See #22.

Square brackets [ ] around a reconstructed form indicate the reconstruction is based on the data of one language family. See #1.

k^{c} = Altaic aspirated k.
Ç = A glottalic consonant, except Dravidian retroflex consonants.
C′ = A palatal consonant.
ʔ = Glottal stop.
ʕ = Voiced pharyngeal.
ḥ = Voiceless pharyngeal.

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COMPARATIVE-PHONETIC TABLES FOR NOSTRATIC RECONSTRUCTIONS
Compiled by Vladimir Dybo

I. Nostratic Consonants

Stops

NOSTRATIC		AA	Kartv.	IE	Uralic	Drav.	Altaic
initial	inter-voc.						
pʕ-*		p	pˌ p̣	p	p-	p-	pʕ-
	-pʕ-	p	p	p	-pp-~-p-	-pp-~-v-	-p-~-b-
p-		p₁	p₁(p~b)[1]	p~b[1]	p-	p₁-(p-~v-)	p-
	-p-	p₁	(p~b)[1]	p~b[1]	-p-	-pp-~-v-	-b-
b-		b	b	bh	p-	p-	b-
	-b-	b	b	bh	-ɯ-	-?**-~-v-	-b-
ṭ-		t[1](t)[2]	ṭ	t	t-	t-	tʕ-
	-ṭ-	t[1](t)[2]	t[1]	t	-tt-~-t-[3]	-t(t)-[3]	-t-
t-		t	t	d	t-	t-	t-
	-t-	t	t	d	-t-	-t(t)-[3]	-d-[3]
d-		d	d	dh	t-	t-	d-
	-d-	d	d	dh	-δ-	-ṭ(ṭ)-[3]	-d-
ḳ-		q(k)[2]	ḳ	k̂,k,kɣ	k-	k-	kʻ-
	-ḳ-	q	k[1]	k̂,k,kɣ	-kk-~-k-[3]	-k(k)-	-k-~-g-
k-		k	k	ĝ,g,gɣ-	k-	k-	k-
	-k-	k	k	ĝ,g,gɣ-	-k-	-k(k)-	-g-
g-		g	g	ĝh,gh,gɣh	k-	k-	g-
	-g-	g	g	ĝh,gh,gɣh	-ɣ-	-ˌθ-	-g-

* The dash indicates the presence of a vowel in the given position.
** Henceforward, the sign (?) denotes that the expected reflex is not determined for a given configuration.

[1] In Kartv. and IE, the reflexes of Nostratic p are found to be unstable.

[2] In Afro-Asiatic, glottalization occurs regularly in non-lexical morphemes, roots containing p as the second consonant, and sporadically under other conditions still not clear.

[3] The reflexes in post-consonant position are the same as in initial position.

Sibilants

NOSTRATIC initial	NOSTRATIC inter-voc.	AA	Kartv.	IE	Uralic	Drav.	Altaic
s-		š	s	s	ś-	c-	s-
	-s-	š	s	s	-s-	-cc-~-c-	-s-
ś-		š	s_1	s	s-	c-	s_1-
	-ś-			s	-s-	-?-~-c-	
š-		š	š	s	š-		[s_1-]*
	-š-	š	š	s	-š-	-cc-~-?-	-s_1-
z-[4]		š	z	s	s-	c-	ž-
	-z-[4]						

Affricates

NOSTRATIC initial	NOSTRATIC inter-voc.	AA	Kartv.	IE	Uralic	Drav.	Altaic
ç-		ş	ç	sk͡,sk,skʷ	ś-	c-	[č-]*
	-ç-	ş	ç	-s-	-ś-	-c-	
c-		s	c	sk͡,sk,skʷ	ś-	c-	č-
	-c-						
ʒ-		z	ʒ				ž-
	-ʒ-						
ć-		ş		sk͡,[sk,skʷ]	ć-	c-	č-
	-ć-		$ç_1$	-s-	-ćć-	-cc-~-c-	-č-
ć-		s	c_1	sk͡-,sk-	ć-	c	č-
	-ć-	s	c_1	-s-	-ć-	-cc-~-c-	-č-

[4] "The question of reconstructing a voiced sibilant corresponding to *ś should probably remain open. Such a phoneme... appears in a few forms in Kartv. (=I). Only one has a correspondence in AA (where, as usual, we have š): Kartv. *mz_1e 'sun' ~ AA *mš, šmš (redup. *mšmš)." (From the author's material for a comparative grammar.)

*In square brackets, probable but unattested reflexes are given.

Affricates (continued)

NOSTRATIC initial	NOSTRATIC inter-voc.	AA	Kartv.	IE	Uralic	Drav.	Altaic
ʒ́-		ʒ̲	ʒ1			c-	ǯ-
	-ʒ́-	ʒ̲	ʒ1	-sd-(?)			
č́-		ṯ(>ṣ~ṯ)	č́	st-	č	c-	č-
	-č́-	ṯ(>ṣ~ṯ)	č́	-s-	-čč-	-c-	-č-
č-		ṯ		st-	č-		č-
	-č-	ṯ	č		-s-	-č-	-č-
ǯ-		ḏ	ǯ	st-	č-		
	-ǯ-	ḏ			-č1-		-ǯ-~-d-

Laterals

NOSTRATIC initial	NOSTRATIC inter-voc.	AA	Kartv.	IE	Uralic	Drav.	Altaic
ś-		ś	š	s	ś-(~š-)	c1-	s1-
	-ś-	ś	š	s	?-ś-(~š-)	-c-(?)	
λ-					δ́-		d-(?)
	-λ-	l	l	l	-δ́-	-ṯṯ-~-ṯ-	-l-

Postvelars

NOSTRATIC initial	NOSTRATIC inter-voc.	AA	Kartv.	IE	Uralic	Drav.	Altaic
q̇-		q	q̇	k̂,[k,ɣk]	k-	k-	k-
	-q̇-	q	q̇	[k̂],k,[kɣ]	-kk-	-kk-~-k-	-k-
q		ḫ	q	[ĥ],h,[hɣ]	∅-	∅-:*	∅-:
	-q-	ḫ	q	H	-k-	-k-	-k-~-g-
-g-		ġ	γ	[ĥ],h,hɣ		∅-:	∅-:
	-g-	ġ	γ	[ĥ],h,hɣ	-γ-	-:∅-	-:∅-

* Here and below, the sign : denotes the lengthening of a vowel represented by the preceding dash.

Pharyngeals and Laryngeals

NOSTRATIC initial	NOSTRATIC inter-voc.	AA	Kartv.	IE	Uralic	Drav.	Altaic
ḥ-		ḥ		h			Ø-
	-ḥ-	ḥ	χ	h			
ʕ-		ʿ	h>Ø			Ø-;	Ø-;
	-ʕ-	ʿ	h,Ø	ĥ	-k-(?)	-k-(?)	-;Ø-
ʔ-		ʾ	h>Ø	ĥ,h,[hɣ]	Ø-	Ø-	Ø-
	-ʔ-	ʾ	h,Ø	ĥ,[h,hɣ]	-;Ø-		;Ø-
h-		h		ĥ,h,[hɣ]		Ø-;	
	-h-	h		ĥ,h,[hɣ]			

Liquids

NOSTRATIC initial	NOSTRATIC inter-voc.	AA	Kartv.	IE	Uralic	Drav.	Altaic
j-		j-	j-,Ø-[5]	j̲-	j-	j-,Ø-[5]	j-
	-j-	j		j̲	j-	-j-	-j-
w-		w	w	ɰ̲	w-	v-,Ø-	(b-?),Ø-
	-w-	w	w	ɰ̲	-w-	-v-	b,Ø,(v)
r-		r	r	r-	r-	n-	[l-?]
	-r-	r	r	r	-r-	-r-,-r̲-[6]	-r-
	-ṙ-	r	r	r	-r-	-r̤-	-ṙ-
l-		l	l	l	l-	n-	l-
	-l-	l	l	l	-l-	-l-	-l-
ɬ-		l	l	l	ɬ-	t-	l-
	-ɬ-	l	l	l	-ɬ-	-l̤-	-l-
	-ĺ-	l	-r-~;l-	-l-	-ĺ-	-l̤-	-ĺ-

[5]In Kartv. and Drav., -j- is lost before e, as is expected.

[6]In Drav., r > r̲ in the position before the (now lost) Nostratic second-syllable front vowels.

Nasals

NOSTRATIC initial	inter-voc.	AA	Kartv.	IE	Uralic	Drav.	Altaic
m-		m	m	m	m-	m-	m-
	-m-	m	m	m-	-m-	-m-	-m-
n-		n		n	n-	n-	
	-n-	n	n	n	-n-	-n-,-n̲-	-n-
ñ-					ñ-	n-	ń-
	-ñ-	n	m(?)	n	-ñ-	-n̲-,-tt-	-ń-
ń-		n		i̯,n-	ń-		ń-
	-ń-	n			-ń-	-ṇ-(?)	-n-(?)

II. Nostratic Consonantal Clusters (with sonants[7])

Sonants with Bilabials

NOSTRATIC -CS-*	-SC-	AA	Kartv.	IE	Uralic	Drav.	Altaic
	-Sp̣-						
	-Sp- -Sb-	-Sp-	-Sb~Sp-	-Lp-,Nb-		-Sp-	
	-Sb-(-rb-)	-rb-	-rb-	-rp-	-rp-	-r-	-rb-

Sonants with Dentals

NOSTRATIC -CS-*	-SC-	AA	Kartv.	IE	Uralic	Drav.	Altaic
	-Sṭ-(-Nṭ-)				-Nt-		-ːt-(?)
	-St-(-Nt-)				-Nt-		-d-(?)
	-Sd-(-Nd-)			-Ndh-	-Nt-	-ṇṭ-	-nd-

[7]Laryngeals, pharyngeals, sibilants, and, possibly, sibilant affricates could form clusters not only with sonants, but also with stops in Nostratic; pharyngeals definitely formed clusters with both groups. However, our material is too scarce to be presented in a table format.

* The following symbols are used in the table: C–consonant, S–sonant, N– nasal sonant, L–liquid sonant; ː denotes lengthening of a preceding vowel.

Nasals with Back Consonants

NOSTRATIC -CS-*	-SC-	AA	Kartv.	IE	Uralic	Drav.	Altaic
	-nḳ-		-nk-	-nk-	-ŋk-	-ṅk-	-ʒ-
	-nk-			-ng-	-ŋk-	-ṅk-	
	-ng-	-m-	-m-	-ngh-	-ŋ-	-ṅk-	-ŋ-

Liquids with Back Consonants

NOSTRATIC -CS-*	-SC-	AA	Kartv.	IE	Uralic	Drav.	Altaic
	-rḳ-		-rḳ-	-rk-			
	-rk-	-rk-	-rg-				
	-Lg-	-Lg-	(*rg›)-rg-	-Lgh	-rk-(lγ)	(rg›)-ːr-	

Sonants with Postvelars

NOSTRATIC -CS-*	-SC-	AA	Kartv.	IE	Uralic	Drav.	Altaic
	-Sq̇	-S-q-	-Sq̇-	-Sk-	-Sk-		-Sk-
	-Sq-	-S-ḫ-	-Sq-(?)	-S-H-	-S-	-SS-	-ːS-
	-Sg-	-S-ġ-		-Sγ~γS-	-S-H-	-ːS-	-ːS-
	-ːS-						

Sonants with Pharyngeals and laryngeals

NOSTRATIC -CS-	NOSTRATIC -SC-	AA	Kartv.	IE	Uralic	Drav.	Altaic
-ḥs		-ḥ-S-		-H-S-		-S-	-S-
	-S-ḥ-	-S-ḥ	-Sχ-~χ-S-	-S-H-	-S-	-SS-(-S-)	-S-
-ʕS-		-ʕ-S-	-ːS	-H-S-	-ːS-	-ːS-	-ːS-
	-Sʕ-	-S-ʕ-	-S-				-ːSg-
-ʔS-		-ʔ-S-	-S-			-S-	-S-
	-Sʔ-	-S-ʔ-	-S-	-S-H-		-S-	
-hS-		-h-S-		-H-S-	-S-	-ːS-	-ːS-
	-Sh-	-S-h-	-S-		-ːS-	-ːS-	-ːS-

Clusters containing j and w.

NOSTRATIC -CS-	NOSTRATIC -SC-	AA	Kartv.	IE	Uralic	Drav.	Altaic
	-jw-			(k̂)-ɣ-	-jw-	-v-	-v̂j-b
	-jl-	(j)-l-		(k̂)-l-		-ːl̩-	-v̂j-l-
	-jr-	(j)-r-		(k̂)-r-		-ːr̥-	-v̂j-r-
-rj-		-r-j-		-r-	-rj-	-ːr̥-	-ːr-
	-jn-	(j)-n-		(k̂)-ń-(>j̨n)	-jn-		
	-jñ-			(k̂)-n-(<ń ?)	-jñ-	-ːn-	
	-wd-	(w)-d-		-ɣ-dh-	-wδ-	-ːṭ-	

III. Nostratic vowels of a first syllable.

a) East Nostratic Vocalism

East Nostratic	Uralic	Dravidian	Altaic
*a	a	a	a
*o	o	o/a	o
*u	u	u	u
*ä	ä	a	ä
*e	e	e	e
*i	i	i	i
*ü	ü	u	ü/ö

b) Nostratic vocalism as reflected in the West Nostratic languages.

Nost-ratic	East Nostratic	Afro-Asiatic	Kartvelian	Indo-European CVC	KV(C)	CVS
a	a	CC	a,c ~ ø	C-C[8]	K-(C)	C-S
o	o	CωC~CC-[8]	we,wa~(u)	C-u̯-C	Ku̯-(C)	C-S
u	u	CωC~CC-	we,wa>o ~u (>ø)	C-u̯-C	Ku̯-(C)	C-S
ä	ä	CjC~CC-		C-i̯-C	K̂-(C)	C-S
e	e	CjC~CC-		C-i̯-C	K̂-(C)	C-S
i	i	CjC~CC-		C-i̯-C	K̂-(C)	C-S
ü	ü	CωC~CC-		C-u̯-C	Ku̯-(C)	C-S

[8]In IE the dash denotes the members of the alternating row (e or o or ø), distributed according to the rules of the Indo-European stem. In Afro-Asiatic the dash denotes the spreading of the original root.

SEMANTIC INDEX TO NOSTRATIC RECONSTRUCTIONS

Mark Kaiser

'abandon'	ķaƛa
'abdomen'	Ķarb/i/
'abundant'	malʌ
'acquire'	Labʌ
'anger, spiritual pain'	korʌ
'angry'	Ķin/u/
'antelope'	gurHa
'arise'	buHi
'arm'	gäţi
'armpit'	Ķawingʌ
'arrive'	ʔejʌ
'ask'	pirķʌ
'astringent'	čämʌ
'awake'	šehr´a
'bad'	magu
'bandage'	jaHU
'bark'	kojHa
'bark'	Ķar´ä
'bark, rind'	Lopʌ
'basket (woven)'	ĶUćʌ
'be'	Ha
'be at a place'	ʔesA
'beat'	čAdʌ
'beat'	ćapa
'beat'	ţapɧa
'become'	Ha
'bend'	łonĶa
'bend'	büĶa
'bend'	güpA
'bend'	Nuq/ü/
'bend'	ñajgu-
'bend'	ɡarķu
'bend at the joints'	küjñA
'bent'	büĶa
'bent'	Ćimpa
'berry'	marja
'big'	bara
'big'	wola
'big'	didʌ
'birch'	kojw/a/
'birth, give b. to'	Ķanʌ
'biting insect'	kʌmʌ
'black'	Ķar/ä/
'blaze'	ńara
'blind'	balʌ
'blood'	Ķurʌ
'blow'	bʌl´Hʌ
'blow'	dEwHi

'boil'	ɻüpä
'boil'	bur´a
'bone'	ɻaSʌ
'bore'	bura
'born, be b.'	ɻanʌ
'bow'	ñajgu-
'branch'	ʕʌʔʌ
'break'	biçʌ
'break'	murʌ
'break'	pär´/a/
'breast'	ɻErdʌ
'breast'	mälgi
'breast'	ʕ/e/bU
'breathe'	ʔanqʌ
'bright'	dIga
'bright'	jela
'bright'	mʌ/ź/ʌ
'brown'	bor´a
'bubble up'	bur´a
'burn'	Henka
'burn'	ɻajla
'burn'	ɻarʌ
'burn (sacrificial offerings)'	ʕʌLʌ
'carnivore (small)'	Luɻʌ
'caterpillar'	koja
'cattle'	poɻwe
'chase'	Haja
'chew'	käjwʌ
'child'	bʌrʌ
'chop'	ćapa
'chop'	ɻaHPʌ
'clan'	ɻülä
'cliff, steep elevation'	ɻarʌ
'close'	ɻapa
'cloud'	bilwi
'cold'	kül´ʌ
'collapse'	Herä
'come'	ʔejʌ
'community'	ɻülä
'cover'	büri
'cover'	cʌtʌ
'cover'	danga
'cover'	ɻapa
'crane'	karʌ/kurʌ
'crawl'	Kačʌ
'cross (a mountain)'	ʕal´ʌ
'crust'	ɻar´ä
'curved'	čimpa
'cut'	calu
'cut'	čArʌ
'cut'	čiɻʌ
'cut'	ɻäćä
'cut'	ɻurʌ

'damage'	lAsʌ
'damp'	L/a/ʈʌ
'damp'	mär´ä
'damp'	ńäʔʌ
'dark'	ʂar/ä/
'darkness'	gʌmʌ
'dawn'	gE/hr/a
'dawn'	goHjʌ
'daylight'	rEʕʌ
'daylight'	ʔamu
'deaf'	dUrʌ
'deer'	ʔili
'defect'	munE
'defend'	/ƥ/eHńa
'deformity'	munE
'depart'	ʂaƛa
'depression (geog.)'	Lamd/i/
'descendants'	ʔ/a/ñʌ
'desire'	hawʌ
'detain'	mana
'devour'	ʂUmʌ
'die'	dʌwʌ
'die'	m/ä/rʌ
'difficult'	mu(n)ʂʌ
'dig'	ʂaHPʌ
'dig'	ʂajwʌ
'dirty'	mArʌ
'disappear'	maHjʌ-
'do'	Kejʌ
'dog'	ʂüjnA
'drag'	Hir´a
'drip'	curʌ/corʌ
'dust'	bur(H)ʌ/bor(H)ʌ
'eat'	ʐʌʕmʌ
'eat'	ʔitä
'edge'	HonC´a
'edge'	ƥurʌ
'egg'	muña
'empty'	goƥa
'empty'	ʂEñU
'end'	HonC´a
'end'	muda
'excessive'	bʌgʌ
'extend'	jänTʌ
'extinguish, go out'	KuPśa
'extremity'	duлʌ
'eye'	Huʂa
'fall'	Ku/s/i
'fall'	ʂetʌ
'fall'	ʂulʌ
'fall'	ƥ/ä/jlʌ
'fall'	ƥadʌ
'false'	menʌ

'fat'	bongä
'fat'	mer´ʌ
'fatty'	kojHa
'favorable'	SʌlʌlʌHi
'fear'	pelHi
'feathers'	/p/u/ñ/a
'feel'	metA
'fetus'	ʔ/a/ñʌ
'find'	lewdä
'fire (n.)'	duli
'fire (n.)'	ńara
'fire (n.)'	qoţi
'fire (n.)'	ʔaSa
'fire (v.)'	ĶarʌKarʌ
'fish'	diga
'fish'	kalʌ
'flash'	balga
'flat'	ɬapa
'flea'	puŗčʌ(ʌ)/pülčʌ(ʌ)
'flee'	bok/a/
'fleece'	kal´ʌ
'fleece'	koλʌ
'flow of water'	Huwa
'flow'	ńohrʌ
'flow'	guru
'fog'	KümTä
'follow, track'	Koki
'food'	ʔal´a
'foot'	pal´qʌ
'forehead'	ne/rH/i
'forward edge'	HalʌHalʌ
'freeze'	kül´ʌ
'fur'	/p/u/ñ/a
'futile'	menʌ
'gape'	Hanga
'gather fruit'	ķʌrpʌ
'get'	woţa
'girdle'	jaHU (or joHʌ)
'give'	be/rH/u
'glimmer'	çäjḫa
'gnaw'	ĶorʌKorʌ
'go'	kä/lH/ʌ
'go with effort'	KačʌKačʌ
'good'	bara
'grey-brown'	bor´a
'grief'	gilʌ
'grow (of plants)'	bolʔi
'grow up'	buHi
'guard'	Çirʌ
'hair'	/p/u/ñ/a
'hair'	Ķila
'hair'	ńä/wH/a
'hair (body)'	/p/unčE

'hand'	gäʈi
'hang'	ñajgu-
'hardened crust'	ćarʌ
'head'	ʂaɒʌ
'healthy'	kojHa
'heart'	golHʌ
'heart'	ʂErdʌ
'heat (in summer)'	ʂEɣ̌a
'heavy'	mu(n)ʂʌ
'herd (wild animals)'	Curʌ
'high'	berg/i/
'hip'	ɒoɣ̌qa/ɒodqa
'hoarfrost'	ʂirʌ
'hold'	zaɒa
'honey'	majʎʌ
'horn'	ʂErʌ
'hot'	ʂajla
'hot coals'	gÜrʌ
'ignite'	qoʈi
'ill'	dʌwʌ
'ill'	Lʌɒʌ
'ill'	m/ä/rʌ
'inflate'	bʌl´Hʌ
'insect'	kʌmʌ
'insert'	ɬüʂʌ
'insufficient'	ʂelʌ
'jealous'	ʂin/u/
'juice from trees'	majʎʌ
'jump'	ćelʌ
'knead'	l´ama
'knee'	bʌrKʌ
'know'	ćinʌ
'know'	kENʌ
'lake, small reservoir'	küɬä
'lamb'	kOr´i
'lay'	dʌʔʌ
'leather'	kojHa
'leave'	ʂaʎa
'leg'	ɬ/a/ʂa
'lick'	laʂʌ
'lick'	Lʌšʌ
'lie'	LʌgaLʌga
'life force'	ɒaju
'light (not dark)'	dIga
'light (not dark)'	jela
'light (not dark)'	mʌ/ź/ʌ
'light (not heavy)'	ʂEñU
'limp'	Lawša
'live'	ɒaju
'live'	ʔelA
'look after'	ʂ̌irʌ
'look'	baʂa
'look'	ćuHʌ

'love'	qurE
'low'	Lamd/i/
'lower (v.)'	Nuq/ü/
'male'	gändu
'male'	Herä
'male'	mänʌ
'male'	NajRʌ
'man'	ʁaćʌ
'man'	mänʌ
'man'	NajRʌ
'mash'	l´ama
'meat'	Homsa
'membrum virile'	/ɒ/a/se
'miss'	menʌ
'moist'	ńäɂʌ
'moist'	ńohrʌ
'moist and slippery'	ńilaˌ
'moisture'	mär´ä
'moisture'	mEwʌ
'morning'	ʔamu
'moth'	koja
'mountain'	mALʌ
'move quickly'	ńowda
'mud'	bulʌ
'mud'	łiwa
'nail'	p/a/r/ä/
'name'	nimi
'nape of neck'	gedi
'nape of neck'	ʁapʌ
'navel'	HEnPʌ
'nearby'	daʁa
'neck'	ñiʁa
'newborn'	ńaʕrʌ
'night'	ɡʌmʌ
'now'	Ñüqʌ
'numerous'	malʌ
'obtain'	woʈa
'odor'	čüngʌ
'old'	kirHʌ
'opening'	qowe
'outgrowth'	kanpʌ
'overtake'	woʈa
'overturned'	Kumä
'pain'	baHli
'pain'	P/ä/Hja
'palm'	paliHma
'pass by'	menʌ
'paw'	ʁäpä
'peaceful'	dünga
'peel'	per/e/
'perish'	maHjʌ-
'pierce'	łüʁʌ
'pile'	ʁU/p/a

'plait'	ʂurʌ
'plait (with twigs)'	ʂadʌ
'plant material'	Loɒʌ
'plump'	kojHa
'point'	HoʂKi
'poplar'	Hosʌ
'pour'	L/ä/jʌ
'pour'	ɡuru
'practice witchcraft'	ʔarba
'precipitation'	ɒulʌ
'pregnancy'	ɻ/a/ñʌ
'pull at'	ńükʌ
'pull tight'	jänTʌ
'pull'	Hir´a
'pursue'	Haja
'pus'	čiru
'put out, extinguish'	KuPś́a
'raise'	ʂaLi
'realize'	metA
'receive'	ga(Hʌ)
'reckless'	menʌ
'relation (f.)'	kälU
'relation (f.)'	miń́ä
'relation (f.)'	nat/o/
'relation (m.)'	küda
'remain in place'	mAnʌ
'rest period'	Hütʌ
'rest'	ʂoja
'rind'	ń́ila
'rind'	ʂar´ä
'rind'	per/e/
'rise'	Horä
'rise'	ʂaLi
'rock'	Nuq/ü/
'root'	/p/äsʌ
'round'	gUl´ʌ
'round'	ʂol´ʌ
'rub'	lAsʌ
'run'	Kaǩʌ
'scrape off'	ń́ülʌ-
'scrape'	ʂirʌ
'scrape'	ʂaś́ʌ
'scratch'	ʂaś́ʌ
'scream'	ʂerjä
'scream'	çʌwʌ
'scream'	bil´ʌ
'search'	gOʕrʌ
'search'	lewdä
'secret'	ʂuƛa
'see'	HuʂKa
'seize'	ʂaba/ʂapa
'seize'	kamu
'seize'	Labʌ

'seize'	ńamʌ
'seize'	qamʌ
'seize'	?EmʌA
'settle a place'	?esA
'settlement'	ƥal ʌ
'shake'	dEwHi
'shake'	maHj/e/
'shake'	ńükʌ
'shake'	pelHi
'sheep'	kOr´i
'shepherd'	/ƥ/eHńa
'shine'	jarʌ
'shiny and smooth'	gi/ɬ/ƫu
'short'	ǩUrʌ
'shortage'	muČʌ
'shortage'	munE
'sickness'	gilʌ
'silent'	dünga
'silt'	ɬiwa
'sing'	k/iH/ʌ
'skin (n.)'	kojHa
'skin (n.)'	per/e/
'skin (v.)'	koƛʌ
'skin, pelt'	ńila
'slippery and moist'	ńila
'slush'	čiru
'small'	ǩUtʌ
'small'	biča
'smash'	moLʌ
'smash'	murʌ
'smear with grease/fat'	mer´ʌ
'smell'	čüngʌ
'smooth and shiny'	gi/ɬ/ƫu
'snake'	kUɬʌ
'snow'	luńge
'soft'	ɬejna
'soft'	ńämʌ
'soften'	l´ama
'soil (porous)'	bur(H)ʌ/bor(H)ʌ
'soil'	diqʌ
'sparkle'	balǧa
'sphere'	gUl´ʌ
'spike'	HoǨi
'splash'	ƥisʌ
'spleen'	l/e/ƥA
'split'	calu
'split'	ƥär´/a/
'spoilage'	muČʌ
'spot'	mArʌ
'squeeze'	kamu
'squeeze'	ńamʌ
'stab'	NEgʌ
'stalk'	Ǩila

'stand firmly'	mAnʌ
'steal'	ʂuƛa
'stem'	Ʂila
'step'	mene
'sticky'	lipa
'stone'	kiwi
'stop'	mana
'storm (snow, sand)'	burʌ
'stretch'	jänTʌ
'strip (v.)'	koƛʌ
'strip bark, skin'	kal´ʌ
'strong'	manga
'subside'	ʂulʌ
'suck'	H/i/mi
'sufficient'	bʌgʌ
'sun'	mʌ/ź/ʌ
'sunlight'	dila
'sunlight'	goHjʌ
'swallow'	balʕ/u/
'swallow'	gurʌ
'swallow'	H/i/mi
'swallow'	ʂUmʌ
'swamp'	LaHm/u/
'swamp'	palʌ
'swell up'	ʂüpä
'swell'	bongä
'tail'	ʂudi
'take care of'	/p/eHńa
'take into one's hands'	zapa
'take'	bari
'take'	ga(Hʌ)
'take'	ʔEmʌ
'talk'	çʌwʌ
'talk'	jAnʌ
'tear out'	ńülʌ-
'tear'	pär´/a/
'think'	gu/nH/i
'think'	manu
'think'	mUdʌ
'thirst'	Lubʌ
'thorn'	cujḫa
'thorn'	gara
'thorny branch'	gara
'tickle'	ćaʂʌ
'tie'	bʌnʈʌ
'tie'	ʂurʌ
'tie'	ńida
'tie (tightly)'	ʂärʌ
'tie around'	Cali
'tie to'	baHʌ
'tie to'	Cali
'tie up'	Küʈʌ
'tip'	duлʌ

'tip'	ɋurʌ
'tongue'	Ɣä/lH/ä
'tooth'	/ƿ/alʌ
'tree'	marʌ
'tree: bird cherry'	ƛa/mH/u
'twinkle'	çäjɧa
'twist'	muri
'udder'	mälgi
'underarm'	Ɣawingʌ
'vessel'	kala
'viscera'	Ɣarb/i/
'wander'	kä/lH/ʌ
'wash'	muçʌ
'water'	jamʌ
'water'	L/ä/jʌ
'water'	mEwʌ
'water'	ʕEɣu
'wave (n.)'	dalɋ/u/
'weak'	Lawƨa
'weak'	łejna
'weak'	ɡalpa
'weaken'	maHjʌ-
'weave (with twigs)'	ɣadʌ
'wide'	ČalHa
'wife'	küni
'wild (beast)'	gUjRä
'wolf'	ɣüjnA
'woman'	küni
'woman'	mińä
'worm'	kUłʌ
'worm'	ɣorʌ
'worm'	mʌʈʌ
'wound'	baHli
'woven basket'	ɣUĆʌ
'young male'	majrʌ
'young'	ńaʕrʌ
'youth'	ɣaćʌ
Affix of oblique form of plural nouns	-j(ʌ)
Formant in relative constructions	mA
Formant of comparative degree	jʌ-(ś(ʌ))
Formant of direct object	-mA
Formant of frequentive and iter. verbs	-Ći
Formant of optative	-jE
Formant of verbal constructions	ʔa
Formant, adjectival and diminutive	-Ća
Particle inciting to action	ɣa
Particle of catergorical negation	ʔäla
Particle of directive	ɣʌ
Particle of locative	łA
Particle of locative	da
Particle of negation	ʔe
Particle of past tense	Hi
Particle of prohibition	mä

Particle with collective meaning	qʌ
Particle, intensifying and conjoining	daHʌ
Particle, intensifying and conjoining	ḳ/o/
Pronoun, 1st ps. pl. inclusive	mä
Pronoun, 1st ps. sg. pers.	mi
Pronoun, demonstrative	mu
Pronoun, demonstrative	NA
Pronoun, demonstrative 'that'	ʔa
Pronoun, demonstrative 'this'	ʔi/(ʔ)ʔe
Pronoun, interrogative 'what'	mi
Pronoun, interrogative, 'who'	Ḳe
Pronoun, interrogative, 'who'	Ḳo
Pronoun, inter., relat., 'which, who'	ja
Suffix in the names of wild animals	-bʌ
Suffix of adjectives	-jʌ
Suffix of adjectives	-lʌ
Suffix of collective nouns	-l/a/
Suffix of denominative verbs	-lA
Suffix of oblique form	-n
Suffix of past tense forms	-di
Suffix of plural animate nouns	-NA
Suffix, diminutive-endearing	-jʌ
Suffix, nominal diminutive	-ḳa

This is the index to Illich-Svitych's early reconstructions reproduced in the volume Reconstructions of Languages and Cultures, Bochum, 1989.

ENGLISH SEMANTIC INDEX

'abdomen'	**wa/ć/ʌ
'across'	**çʌrʌ
'across'	{**ʕal´ʌ}
'allow, let'	**šʌwʌ
'angry'	**/ķ/inʌ
'antelope'	**gojrʌ
'arm, hand'	**k/ä/čʌ
'arm, hand'	**qelʌ
'ash-tree'	{**Hosʌ}
'ask, request'	**p̣ir(ķ)ʌ
'astringent'	**çʌmʌ
'awake, alert'	**šerʌ
'bald'	**ṭarʌ
'bare, naked'	**kaljʌ
'bark'	**/ķ/erʌ
'bark'	**Kar´ä
'bark'	**/q/opʌ
'bark'	?**koja
'battle'	**welʌ
'be'	**bu/H/ʌ
'be'	**le
'be'	**woɣlʌ
'be'	**{ʔ}eśʌ
'beat'	**p̣ʌrʌ
'beat'	**ṭap̣ʌ (descriptive)
'beat'	?**wa/ḥ/ʌ
'beat'	?{**SUTʌ}
'become'	{**Ha}
'bee'	{**p/a/rʌ}
'belt'	**jä/H/ʌ
'bend'	**9ʌrķʌ
'bend'	**bu/ķ/ʌ
'bend'	**gupʌ
'bend'	**wankʌ
'bend'	{**Sujʌ}
'bend, incline'	?**tojʌ
'bend, incline, bow'	**łon/ķ/ʌ
'berry'	**mar(j)ʌ
'big'	**magʌ
'big'	**malʌ
'big'	**wolʌ
'big'	{**čokʌ}
'bile, gall'	**bišʌ
'birch'	**kojwʌ
'birth give b. to'	**p̣erʌ
'birth, give b. to'	**/ķ/a/n/ʌ
'birth, give b. to'	**bʌrʌ
'birth, give b. to'	**š/e/wʌ
'birth, give b. to'	**ṭurʌ
'birth, give b. to'	**waldʌ
'bite'	**kʌbʌ
'biting insect'	**ʔonçʌ
'black'	**/ķ/arʌ
'blind'	{**Sokʌ}

'blood'	{**???}
'blood'	{**HesX-r̥-}
'blood'	{**K̥urʌ}
'blow'	**bʌl/H/ʌ
'blow'	**d/ä/wʌ
'blow'	**p̥ušʌ (descriptive)
'blow'	**p̥uɣʌ (descriptive)
'boar'	**9ʌrʌ (descriptive)
'boil, seethe'	**borʌ- (descriptive)
'boil, seethe'	**p̥u(H)jʌ
'bone'	**/k̥/açʌ
'bore, drill'	**burʌ
'bosom'	{**ʕ/e/bu}
'bow'	?**ñigʌ
'box'	**/k̥/o/ç/ʌ
'branch'	**ɣ/o/ʒ́ʌ
'breast'	**mälgʌ
'breathe'	?{**?anqʌ}
'brittle, porous, loose'	**/k/umʌ
'brown'	**borjʌ
'bubble'	**p̥o/k̥/ʌ (descriptive)
'bubble'	{**KUPʌ} (descriptive)
'build'	**k̥adʌ
'build'	**ra/k̥/ʌ
'burn (fuel)'	?**ţ̥ülʌ
'burn'	**/k̥/alʌ
'burn'	**ć̥ʌwʌ
'burn'	**g/o/rʌ
'burn'	**ńurʌ
'burn'	**p̥al´ʌ-
'burn'	**ţ̥/o/gʌ
'burn'	**warʌ
'burn'	**{H}urʌ
'burst'	**pa/k̥/ʌ (descriptive)
'butt (end of tree)'	**ţ̥ungʌ
'call'	**/k̥/erjʌ
'call'	?**ʒ́ʌḫʌ
'calm, peaceful'	**ţ̥u/w/ʌ
'carry'	**ţ̥al(H)ʌ
'carry'	**wegʌ
'cattle'	?**p/ek̥/ʌ
'chase (enemy)'	**n/äk̥/ʌ
'cherry'	**λo/mH/ʌ
'chew'	**käwʌ
'child, baby'	**p̥ojʌ
'chop (w/weapons)'	**wedʌ
'chop off'	**gunʌ
'chop off'	**ţ̥anʌ
'chop'	**/ć/ap̥ʌ (descriptive)
'chop'	**k̥a/p̥/ʌ
'chop'	{**p̥ʌHu} (descriptive)
'cloud'	**bil(w)ʌ
'cold'	**kulʌ
'cold'	**qi/ń/ʌ
'collect, gather' > count	**łokʌ
'come, arrive'	**je(Hʌ)

'come, arrive'	{**tul'ʌ}
'conceive'	**h/u/rʌ
'conjure, practice witchcraft'	**{?}/a/rbʌ
'cover (for dish)'	**komt̪ʌ
'cover (w/clothes)'	**cʌtʌ
'cover'	**/k̪/ap̪ʌ
'cover'	**dangʌ
'cover'	?**ɬäp̪ʌ
'cover, shield from light'	**burʌ
'crane'	{**karʌ/**kurʌ} (descriptive)
'crawl'	**zilʌ
'crooked'	**/ǩ/ymp̪ʌ
'crown (of head)	**/k̪/ir(H)ʌ
'crumple, knead'	**mäńʌ
'curse'	**/ś/otʌ
'cut off (plants)'	**tʌp̪ʌ
'cut'	**c̪arʌ
'cut'	**č̪ik̪ʌ (descriptive)
'cut'	**kertʌ
'cut'	**k̪/ä/ćʌ
'cut'	**k̪o/t̪/ʌ
'damp, moist'	**näč̪ʌ
'damp, moist'	**ńorʌ
'damp, moist'	**wiɬʌ
'dark'	**9ʌmʌ
'dark'	**t̪umʌ
'dawn'	**g/ä/rʌ
'dawn'	**gojʌ
'day'	**nahrʌ
'deaf'	?**dulʌ
'deceased'	{**NEHU}
'deceive'	**durʌ
'deceive'	**tʌlʌ
'deep'	**t̪ubʌ
'deer'	{**?ili}
'defect'	**mu/ǩ/ʌ
'defend'	**qawʌ
'desire'	**h/a/wʌ
'desire'	**wiƛ/g/ʌ
'destroy'	**/l/ukʌ
'destroy'	**ru/ć/ʌ
'devour'	**/k̪/omʌ
'dig'	**/k̪/ajwʌ
'dig'	**rowʌ
'dirt, mud'	**ɬiwHʌ
'dog'	**p̪enʌ
'down, fluff'	**p̪učʌ
'drag'	**{H}/i/rʌ
'drip'	**/ć/ip̪ʌ (descriptive)
'drip'	**c/u/rʌ (descriptive)
'drizzle'	**/s/ip̪ʌ
'dry'	**/s/undʌ
'dry'	**širwʌ
'dry'	**šu/š/ʌ
'dust'	**burʌ
'dwelling'	**gülʌ

'eagle'	**γʌrʌ
'ear'	{**HʌSʌ}
'early'	?**{H}erdʌ
'earth'	**magʌ
'earth, dirt'	{?**diqʌ}
'eat'	**ze9ʌ
'eat'	{**ʔitä}
'eat/drink liquids'	**ǵʌrpʌ (descriptive)
'edge'	**ƥerʌ
'egg'	**muñ(d)ʌ
'empty'	**guƥʌ
'end'	**mutʌ
'exert oneself, be tense'	**ɋim/H/ʌ
'extinguished, go out'	**ku/p/sʌ
'extremitiy'	**duλʌ
'fall down, collapse'	**/ķ/ulʌ
'fall down, collapse'	{**ĸuS/Cʌ}
'fall to pieces, disintegrate'	**{H}erʌ
'fall'	**/ķ/etʌ
'fall'	**ƥu/č/ʌ
'fall'	**wajʌ
'fast'	**ʈurʌ
'fasten together'	**/ķ/urʌ
'fat, grease'	**koj/H/ʌ
'favor'	**zolHʌ
'fear'	**pelʌ
'feel, grope'	**ʈ/e/mʌ
'feel, grope'	**ʈaƥʌ
'film, pellicle'	**/k/al´ʌ
'fire'	**/H/oʈʌ
'fire'	**dulʌ
'fire'	**piγwʌ
'fire'	{**Henkʌ}
'fire'	{**?aSa}
'fish'	**digʌ
'fish'	**ķolʌ
'flat'	**lapʌ, **laptʌ
'flat'	**ʈal/H/ʌ
'flea'	**pur9ʌ
'fleece'	**kolʌ
'fleece'	**loƥʌ
'flow'	**birʌ
'flow'	**ćurʌ (descriptive) (cf. **c/u/rʌ)
'flow'	**ńi(h)rʌ
'flow'	**šarʌ
'fly'	**ƥarʌ (descriptive)
'foam'	**/ķ/uƥʌ
'fog'	{**ĸümTä}
'food'	**/H/alʌ
'foot'	**p/a/l´(q)ʌ
'foot'	**ƥatʌ
'force, strength'	**woj/H/ʌ
'ford'	**käl(ʌ)
'ford, to wade'	**bʌrdʌ
'fox'	**loķʌ
'fragile, brittle'	**l´amʌ

'front (of head)'	**neqrʌ
'front'	**qanţʌ
'front'	?{**HalʌJ}
'full'	**/t/urʌ
'full'	**tängʌ
'give'	**berʌ
'give'	**to/H/ʌ
'glitter, sparkle'	**ç/ä/jʌ
'glue'	**ćabʌ
'glue'	{**PiSʌ}
'gnaw (re:insects)'	**/ķ/urʌ
'go'	**q/a/ţʌ
'good'	**šuwʌ
'grass'	{**CʌmʌJ}
'graze, to shepherd'	**pi/H/ńʌ
'grief'	{**goLʌJ}
'grind'	**molʌ
'grind'	**murʌ
'grind'	**pur(j)ʌ
'grow'	**ţälʌ
'grow'	**wi/š/ʌ
'grow'	?{**???}
'grow'	{**Hitä}
'guard'	**ćʌwʌ
'gullet'	**gurʌ
'hair (facial)'	**w/o/mdʌ
'hair'	**/ķ/il(k)ʌ
'hair'	**ńäwä
'hair'	{**/p/u/ñ/a}
'half'	**päłʌ
'hard'	?{**kämE}
'harvest'	**zukʌ
'head'	**bäńgʌ
'hear'	**q/iw/lʌ
'hear'	**śʌmʌ
'heart'	**g/ʌw/lʌ
'heart'	**ķʌrdʌ
'heart'	{**šʌλʌ}
'hearth'	**ķarʌ
'heavy'	{**Sunķʌ}
'herd'	**çurʌ
'high, tall'	**/ķ/alʌ
'high, tall'	{**berg/i/}
'hill'	**mäkʌ
'hit (the target)'	**ţapʌ
'hoarfrost'	**/ķi/rʌ
'hold'	**/p/itʌ
'hold'	**ńomʌ
'hole'	**pu/ţ/ʌ
'hole, opening'	**qowʌ
'hole, opening'	**won/k/ʌ
'hollow, (arm)pit'	**k/o/ń/g/ʌ
'honey'	**majλʌ
'hoof'	**/ķ/äpʌ
'horn'	**rʌkʌ
'horror'	**tikʌ

'hot weather'	**/H/indʌ
'hot'	**ṗä/ḳ/ʌ
'ice'	**jän/k/ʌ
'incantation, spell'	**śarnʌ
'intestine'	**śʌlʌ
'jackal'	**ʈu/lɣ/ʌ
'jaws'	**{H}ongʌ
'joint (knee, elbow)'	?{**küjñA}
'jump'	**/ć/elʌ
'kill'	**qo(H)lʌ
'kin, family'	**/ḳ/u/l/ʌ
'know'	**ćʌnʌ
'know'	**kinʌ
'know'	**ʈanʌ
'lake'	**/ḳ/oɬʌ
'lamb'	**ḳorʌ
'lead'	**wetʌ
'leaf'	**bolʌ
'leave (tr.)'	**ḳaƛʌ
'left'	**z/e/wʌ
'leg'	**ɬakʌ
'lick'	**l/a/pʌ (descriptive)
'lick'	**laḳʌ (descriptive)
'lick'	**lašʌ (descriptive)
'lie'	**lʌgʌ
'lie, rest (re:corpses)'	**/ḳujʌ
'light (not dark)'	**b/ä/lʌ
'light (not dark)'	**ćohrʌ
'light (not dark)'	**w/a/l´(ḳ)ʌ
'light (not heavy)'	**/ḳ/eñʌ
'light (not heavy)'	**gepʌ
'lip'	**kampʌ
'lip'	**lʌpʌ
'liquid'	**9urʌ
'liquid'	**L/a/ʈʌ
'liquid'	**sʌwʌ
'live'	**ḫujʌ
'live'	**{?}elʌ
'log'	**b/o/rwʌ
'long'	**tel(ḫ)ʌ
'look'	**ba/ḳ/ʌ
'loop, noose'	**/c/olmʌ
'loose, unattached'	**/s/ulʌ
'loose, unattached'	**lawčʌ
'louse'	**ʈäjʌ
'love'	**qurʌ
'low'	**lamdʌ
'lower (adj)'	**qalʌ
'maim, cripple'	**çʌmʌ
'make'	**wärʌ
'male (of species)'	**gändʌ
'male (of species)'	**wi/H/rʌ
'male (of species)'	**{H}erʌ
'man (young)'	**ḳajćʌ
'man'	**najrʌ
'man'	{**mänʌ}

'marten'	**ḳ/u/nʌ
'meat'	**{H}om/ç/ʌ
'miss'	**mentʌ
'mix'	**bulʌ
'moist, damp'	**sulʌ
'morning'	{**ʔamu}
'moth'	?**g/o/jʌ
'mountain'	**wärʌ (Cf. **wo/rH/ʌ)
'mountain'	**wo/rH/ʌ
'move'	**ńowdʌ
'move'	**q/o/dʌ
'move'	?**rʌgʌ
'move'	?{**/š̆/elʌ}
'much, many'	**bʌ9ʌ
'much, many'	**m/o/nʌ, *m/o/n/g/ʌ
'much, many'	**ƥalʌ
'mucus'	**ńilʌ
'mucus'	**ńo/H/lʌ
'mucus'	**śulʌ
'mucus'	**za/l/ʌ
'nail (finger-, toe-)'	{**p/a/r/ä/}
'name'	**nimʌ
'narrow'	**ṭijʌ
'navel'	?{**HEnPʌ}
'near'	**dakʌ
'need'	**ḳelʌ
'nit'	**/ś/ajrʌ
'nit'	**ñejʌ
'now'	**nu
'odor'	**sun(g)ʌ
'old'	**kirʌ
'open wide, gape'	**/ḫ/angʌ
'open'	{**pa(n)č̆ʌ}
'overturn'	?{**kumä}
'penetrate'	**nurʌ
'penetrate'	**sonkʌ
'penis'	**ƥa/ś/ʌ
'penis'	**qʌl'ʌ
'pieces of coal'	**śuλʌ
'pierce'	**/n/ʌgʌ
'pierce'	**ƥedʌ
'pierce'	**qurʌ
'pierce'	**turʌ
'pile'	**ḳ/u/pʌ
'pinch'	**ʔiƥʌ (descriptive)
'plain (n.)'	**gobʌ
'pleasure'	**ṭʌrpʌ
'point, (cutting) edge'	**/ḳ/urʌ
'point, (cutting) edge'	**č̆ʌrʌ
'point, (cutting) edge'	**ƥi/H/ʌ
'point, (cutting) edge'	**wo/lH/ʌ
'point, (cutting) edge'	{**Hoḳi}
'poke, prick'	{**ćaḳʌ} (descriptive)
'poplar'	**ƥulʌ
'portrude'	**garʌ
'pound, crush'	**bič̆ʌ

'pour'	**ju/k/ʌ
'pour'	**läjʌ
'pour'	**tʌ/ḥ/ʌ
'pour'	{**ṭ/o/ķʌ}
'pray'	?**milʌ
'prepare (food)'	**pišʌ
'press'	**ṭunķʌ
'protruding'	{**ṭUmPʌ} (descriptive)
'pull about, annoy'	**ńukʌ
'pull'	**ṭangʌ
'pull'	**ṭanʌ
'pulvarize'	**ba/ś/ʌ
'pursue, follow'	{**Koki}
'push, pound'	**ṭʌlķʌ
'puss'	**säjʌ
'put into'	**ṭärʌ
'put, lay'	**d/i/ɣʌ
'put, lay'	**ṗanʌ
'put, lay'	**ṭäpʌ
'raise, rise'	{**Horä}
'rear'	**gedʌ
'rear'	{**perC/Sʌ}
'rear, raise'	**wirdʌ
'receive'	**sagʌ
'receive'	{**ga(Hʌ)}
'relative (f.) by marriage'	**käl ʌ
'relative (f.) by marriage'	**miń ʌ
'relative (f.)'	**natʌ
'relative (m.) by marriage'	**kudʌ
'relative (m.)'	?**ta/H/jʌ
'roe'	**ṭurʌ
'roll, slide, flow'	**golʌ
'rot'	**čirʌ
'rotate, turn'	**ṭurʌ
'rough'	**/c/arʌ
'round'	**ķol´ʌ
'rub'	**ṭarʌ
'run'	**b/o/kʌ
'run'	**r/u/čʌ
'run'	{**kaČʌ}
'sail, swim, float'	**wojʌ
'sap'	{**śaķʌ}
'say'	**te/ḥ/ʌ
'scatter, strew'	**śa/č/ʌ
'scratch'	**/ķ/ašʌ
'scratch, scrape'	**ķirʌ
'scrotum'	{**Pu(n)dʌ}
'sea'	**jamʌ
'search, find'	**lewdʌ
'secret'	**ķuλʌ
'secret'	**zalʌ
'see'	**/H/o/ķ/ʌ
'see'	**ʒirʌ
'seize'	**/ķ/apʌ (descriptive)
'seize'	**kamʌ
'seize'	**labʌ

'seize'	**qapʌ (descriptive)
'seize'	?**ɣʌɣʌ
'seize'	{**?Emʌ} (descriptive)
'sense, feel'	**mätʌ
'separated (from herd)'	**śo/ƛH/ʌ
'settlement'	**ƥal/9/ʌ
'shake'	**talʌ
'shed'	**ńulʌ
'shine'	**bal/g/ʌ
'shine'	**gil/H/ʌ
'shine'	**jarʌ
'short'	**/ķ/urʌ
'shoulder'	{**Sänķʌ}
'shoulder'	{**toLʌ}
'shout'	**9orʌ (descriptive)
'shout'	**bilʌ (descriptive)
'shout'	**murʌ (descriptive)
'shout'	**ɋulʌ (descriptive)
'sick'	**balʌ
'sick'	**gilʌ
'sick'	**m/ä/rʌ
'sick'	**ƥe/H/jʌ
'side'	**warʌ
'silent'	**dungʌ
'sinew'	**/s/irʌ
'sinew'	**son/H/ʌ
'sing'	**ki/H/ʌ (descriptive)
'skin'	**/p/erʌ
'skin, peel, scales'	{**kama}
'skull'	**gʌlʌ
'skull' > 'vessel'	**/ķ/aƥʌ
'sleep'	**lulʌ (descriptive)
'sleep'	{**Sʌ/p/ʌ}
'sleep'	{?**Hütʌ}
'slippery'	**silʌ
'small'	**ķuʈʌ
'smear (w/clay)'	**śiwʌ
'smear (w/fat)'	**/sä/mʌ
'smell (intr.)'	**ɋarʌ
'smoke'	**č̓un/k/ʌ
'smooth'	**guɬʌ
'snow'	**luńgʌ
'snow'	**šingʌ
'soft'	**lejńʌ
'soft'	**ńämʌ
'sound, ring)'	**śojʌ (descriptive)
'sparkle'	**balɋa
'sparkle'	**jelʌ
'speak, talk'	**çʌwʌ
'speak, talk'	**ḫʌwʌ (descriptive)
'speak, talk'	**watʌ
'speak, talk'	{**ķeLE}
'speak, talk'	{**sUra}
'spit'	**ʈupʌ (descriptive)
'splash'	{**ƥisʌ} (descriptive)
'spleen'	{?**ƛäƛʌ}

'split, splinter'	**ćitʌ
'split, splinter'	**calʌ
'split, splinter'	**p̥il´ʌ
'split, splinter'	**te/l´/ʌ
'spoil, ruin'	?**k/o/ndʌ
'spot, stain, blot'	**m/a/rʌ
'spread out'	{**ʒada}
'spread, diffuse'	**p̥a/rj/ʌ
'spread, diffuse'	**ǯʌrʌ
'squeeze'	**p̥aj/n/ʌ
'stand, remain in place'	**mänʌ
'stick into'	{**C/i/ngʌ}
'sticky'	**lip̥ʌ
'stone, rock'	**kiwʌ
'stone, rock'	?**ţ/aj/lʌ
'stop, end'	**manʌ
'storm'	**bur(9)ʌ
'straight'	?**woj/ķ/ʌ
'strong'	**ţinʌ
'strong'	**wäkʌ
'strong'	?**ʒ́ʌlʌ
'suitable, appropriate'	**ta/ķ/ʌ
'suitable, appropriate'	**ţʌbʌ
'summer'	**k/y/č̥ʌ
'sun'	**dilʌ
'sun'	?{**si??}
'swallow'	**śem/H/ʌ
'swallow'	{**tarʌ}
'swamp'	**la/H/mʌ
'swamp'	**p/u/lʌ
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'take'	**zap̥ʌ
'tame, domesticated'	?{**HUNʌ}
'tear'	**ter(H)ʌ
'tear'	?{**qʌlčʌ} (descriptive)
'tear'	{**pʌrçʌ} (descriptive)
'testicle'	**g̥ol´ʌ
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'think'	**g/u/nʌ
'think'	**m/a/nʌ
'think'	**sanʌ
'thirst'	**lubʌ
'thorn'	**/c/uj(H)ʌ
'throat'	**bilɣʌ
'throw'	{**wECʌ}
'thrust, shove'	**łu/ķ/ʌ
'tie together'	**9udʌ
'tie together'	**bandʌ
'tie together'	**ķärʌ
'tie together'	**śi/H/ʌ

'tie together'	**śidʌ
'tie together'	?{**ńida}
'tie together'	{**baHʌ}
'tighten'	**jän/t/ʌ
'tire'	{**wESʌ}
'tongue'	?**ńan/g/ʌ
'tooth'	**/ḇ/alʌ
'touch'	**täkʌ
'tree, wood'	?{**m/a/jd}
'two'	**to
'unattached, loose'	**śel(k)ʌ
'vertebra'	**ñiķʌ
'vessel (clay)'	**ḇatʌ
'violence'	**š/u/dʌ
'viscera'	**ķar(w)ʌ
'wander'	{**kä/lH/ʌ}
'warm (oneself)'	**ţ/ä/pʌ
'wash'	**m/o/ç(k)ʌ
'wash'	{**baNʌ}
'wash'	{**rʌḥʌ}
'water'	**m/äḥ/řʌ
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'water'	**ɣa/ķ/ʌ
'water'	{**Huwa}
'weak'	?**/9/ʌlpʌ
'weak'	{**laC/Sʌ}
'weakness (physical)'	**dʌwʌ
'weave'	**ḇu/nj/ʌ
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'wide'	**/č/al/H/ʌ
'wide'	**ḇaţʌ
'wide'	**ḇilʌ
'wide'	**rʌwḥʌ
'widen'	?{**PäC/Sʌ}
'willow'	**śalʌ
'wolf'	**ķujnʌ
'woman'	**k/u/nʌ
'wood'	**marʌ
'work'	**mu(n)ķʌ
'worm'	**kuɬʌ
'worm'	**mʌţʌ
'worry'	**rʌ(h)bʌ
'worry, be upset'	**t/o/lgʌ
'worry, care for'	**čʌrʌ
'year'	**w/e/ţʌ
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ISBN 0342-4871

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